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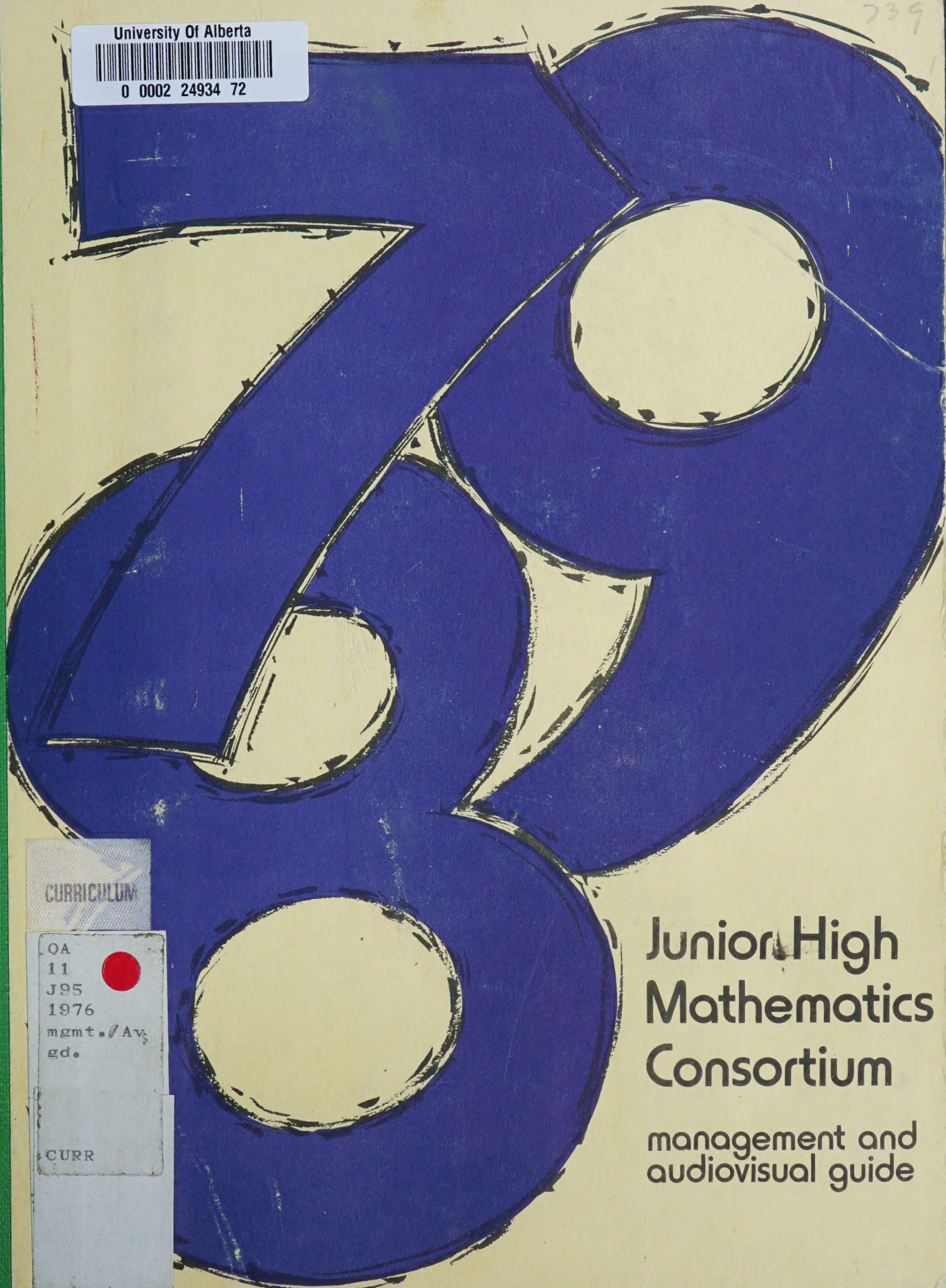

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Junior High Mathematics Consortium

management and audiovisual guide

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JUNIOR HIGH MATHEMATICS CONSORTIUM

MATHEMATICS PROGRAM

This Junior High Mathematics Program has been prepared through the cooperative efforts of the twenty member systems in the Junior High Mathematics Consortium. All the components of the program are related to performance objectives and provide the teacher with a variety of teaching strategies, activities and resources to facilitate the instructional process. The teachers have the opportunity to determine the modes of instruction that best suits them and their students.

For each objective within the program, there is a bank of test items. The items in the bank have been field tested to determine difficulty and reliability and validated by a committee of teachers and curricular coordinators.

The program was made possible through the assistance and cooperation of many individuals. Special thanks and acknowledgments are extended to:

the many teachers who helped design, develop, pilot and revise the program materials;

the publishers for referencing their materials to the performance objectives: Addison-Wesley, Gage Publishing and Holt Rinehart;

the Department of Education, Province of Alberta for partially funding the project;

the administrators, supervisors, consultants and curricular associates from each of the cooperating systems for providing time, money and expertise to the program.

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Acknowledgements

Special thanks are extended to the following people who spent many hours developing, revising, piloting and evaluating material for inclusion in this program.

BONNYVILLE SCHOOL DIVISION #46

Elaine Doonanco
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Mike Krywiak
Sonia Layton
Joanne McMillan
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ACKNOWLEDGEMENTS - continued

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JUNIOR HIGH MATHEMATICS PROGRAM

MANAGEMENT GUIDE FOR TEACHERS

TABLE OF CONTENTS

		PAGE
I.	SECTION ONE	
	A. Program Components	1
	B. Program Overview	2
	C. Timeline and Unit Sequence	6
	D. Instructional Pathways	7
II.	SECTION TWO	
	A. Classroom Management	13
	B. The Ideal Teacher	14
	C. Discipline	15
	D.1 General Lesson Plans	16
	2 Daily Lesson Plans	17
	E. Questioning and Discussion Techniques	18
	F. Motivation	19
	G. Individual Differences	20
	H. Homework	21
	I. Creativity in the Classroom	22
	J. Recreational Activities	23
	K. Evaluation	24
	L. How to Study Mathematics	27

SECTION I

A. Program Components

The Junior High Mathematics Program is composed of two basic sets of materials. Most of the components are designed for teacher use and are intended to facilitate lesson planning and classroom instruction. The second set of materials is for student use and basically consists of exercise booklets. The components may be outlined as follows:

1. Teacher Materials

   Teacher materials or kit consist of:

   (a) Management Guide
   (b) Teacher's Resource Book
   (c) Cross-Reference Manual
   (d) Basic Skills Supplement
   (e) Test Item Bank

2. Student Materials

   For each grade level, the exercises for all the objectives are packaged into two booklets. Thus, grade seven has two exercise booklets, grade eight, two booklets, and grade nine, two booklets.

B.

Program Overview

The Junior High Mathematics Program is based on a set of performance objectives which define the program's scope and sequence. The strands used in the elementary school are retained to assist articulation between elementary and junior high school grades. The Junior High Mathematics strands are:

1. Numbers, Operations and Properties
2. Numeration
3. Measurement
4. Geometry
5. Applications
6. Algebra (additional Grade Nine strand)

The objectives have been sequenced into teaching units. It is hoped teachers will maintain the suggested unit sequence to facilitate pupil transfer, inservice programs and cooperative planning. Within each unit some of the objectives are asterisked to indicate that they are an extension to the core program. It is the teacher's responsibility to select the asterisked objectives which are appropriate for her students.

The program components were developed by using the course objectives as a basis. These components were designed to accomplish three goals:

1. To define the Junior High Mathematics Program.
2. To provide teachers with curriculum support materials to achieve these objectives.
3. To provide teachers with a reliable means of monitoring student achievement.

MANAGEMENT GUIDE

1. Management Section -

   The purpose of the Management Guide is to acquaint teachers with the components of the Junior High Mathematics Program. Various suggestions are included regarding timelines, instructional pathways and general classroom techniques which may facilitate the instruction of mathematics in the classroom.

B. PROGRAM OVERVIEW - Continued

MANAGEMENT GUIDE

2. Audiovisual Reference Guide -

The audio-visual section contains an evaluation of audio-visual materials which are referenced to the performance objectives.

TEACHERS RESOURCE BOOK

1. Performance Objectives -

A set of objectives which define the Junior High Mathematics Program's scope and sequence.

2. Learning Package -

Consists of (a) lesson developments
(b) keyed exercises for each objective
(c) keyed review exercises

The learning package for each unit was developed to provide the teacher with instructional materials which would facilitate the teaching of the course objectives. The contents of each package were written by Alberta junior high mathematics teachers using materials and techniques they have found successful.

The objective developments are not intended to be prescriptive in either content or approach. This section is provided as a service to teachers with the intent that the ideas presented will be helpful in reducing the amount of time required for lesson preparation.

The suggested developments were written for the teacher and therefore are not intended for student self-study. The developments usually focus on only one objective; therefore, each unit should be previewed with the purpose of combining a number of consecutive objectives for more effective teaching and continuity.

3. Activities Section -

Provides the teacher with activities which are designed to be both instructional and motivational. Teacher-made activities were researched and those deemed useful are included in the unit to which they apply.

B. PROGRAM OVERVIEW - Continued

TEACHERS' RESOURCE BOOK

4. Labs Section -

Provides laboratory experiments through which students may discover mathematical concepts. A number of labs have been field-tested and those found successful were included in the unit to which they apply.

5. Applications Sections -

Provides material through which the mathematical objectives may be related to their applications in the modern world.

6. History Section -

Provides material through which the development of mathematics may be examined.

7. Transparency Masters -

Provide demonstration models, sample problems and student notes.

CROSS-REFERENCE MANUAL

The Cross-Reference Manual provides the teacher with an index of textbook references in which the development of an objective or related exercises are to be found. If no text references are listed the teacher should refer to the learning package for the required development and exercises.

BASIC SKILLS SUPPLEMENT

For this supplement a set of basic skills objectives have been identified and exercises for them have been developed. These exercises are of a high interest, motivational nature and may be used with students who would benefit from such a program.

STUDENT EXERCISE BOOKS

The books contain:
(a) student concept check list for each unit
(b) reminder "clouds" of major concepts and example problems
(c) exercises for each objective
(d) review exercises

B. PROGRAM OVERVIEW - Continued

TEST ITEM BANK

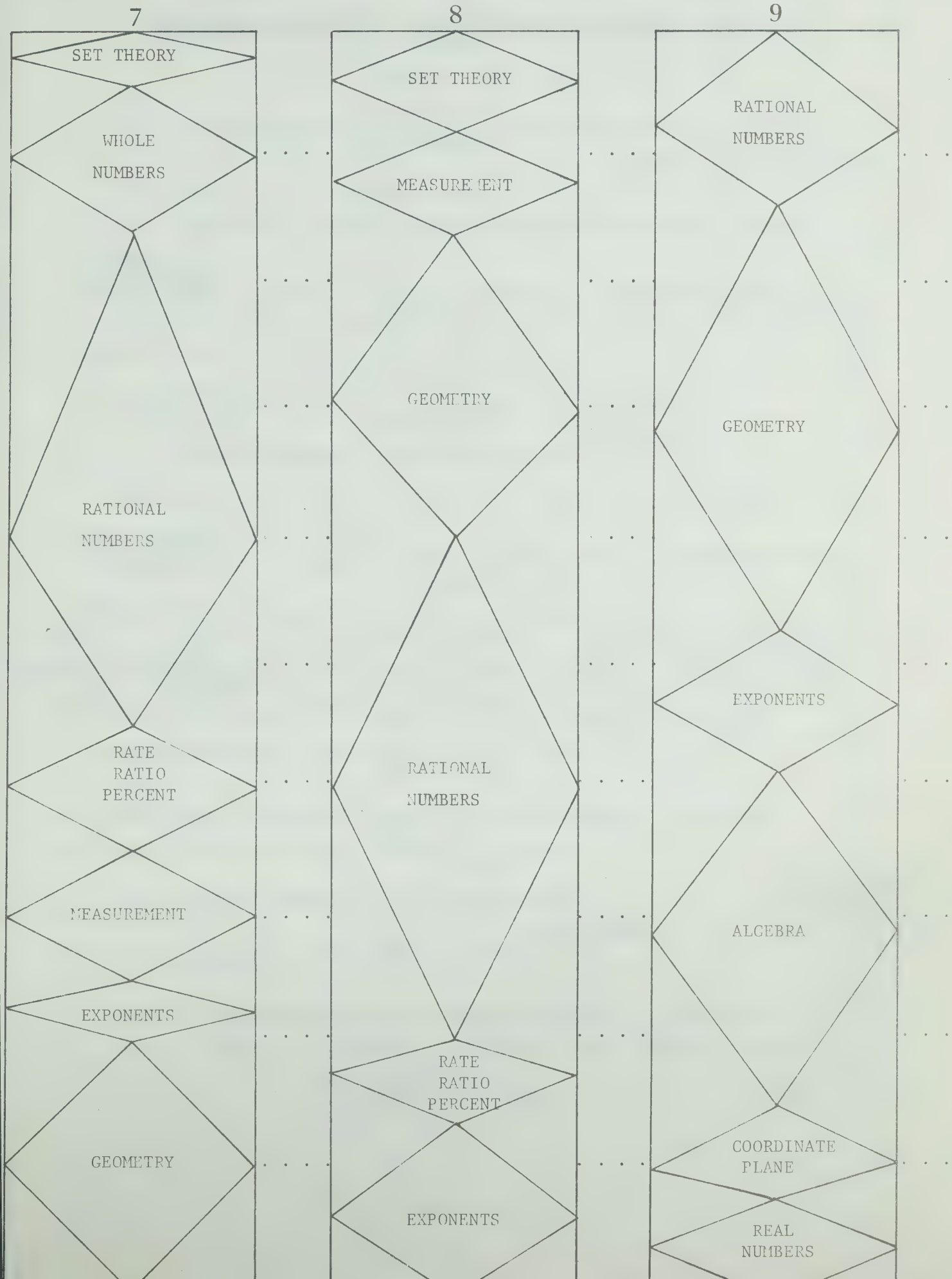
A Test Item Bank has been compiled by the Consortium using the Test Item Bank developed by the Edmonton Public School System as a basis.

The test items are packaged in looseleaf binders to allow for continuous up-dating and revision. The bank includes multiple choice, matching, completion and open-ended questions referenced to the objectives.

CONSORTIUM NORMED SURVEY TESTS

Two parallel survey tests are available for use in grades seven, eight and nine. One was developed by the Edmonton Public School Board and has been normed using a sample of Consortium schools. The other was developed by the South Zone of the Consortium, coordinated by the Calgary Public School Board. Both tests consist of clusters of multiple choice questions which reflect the emphasis given to each unit by teachers using the program. The tests are designed to cover the full year's work.

c. Timeline and Unit Sequence



D. Daily Instructional Pathways

A teacher may utilize the program materials in several ways as shown by the following flow chart.

Objective: The teacher decides on the objective to be taught.

1. Lesson Development: To develop the daily lesson the teacher decides to use the development provided in one of:
   - (a) The Text - as given in the Cross Reference Manual
   - (b) The Program - as given in the Teacher's Resource Book
   - (c) Teacher's Own -- in other sources

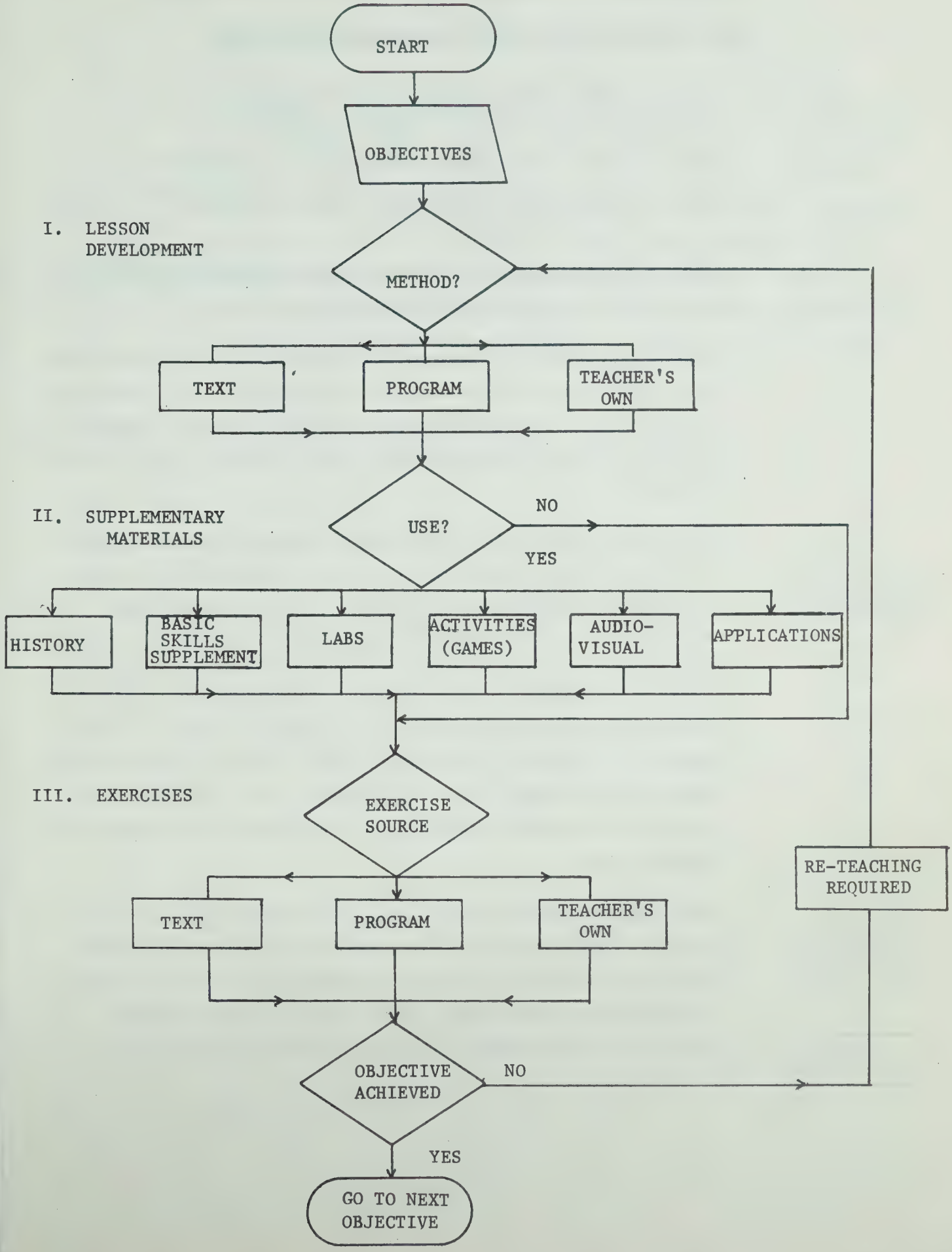
2. Supplementary Materials: The teacher decides on the additional materials needed for his lesson.
   - (a) Low level exercises - from the Basic Skills Supplement
   - (b) Labs, Activities, Games - from the Teacher's Resource Book
   - (c) Audio-Visuals - from the Audio-Visual Guide
   - (d) Application Activities - from the Teacher's Resource Book
   - (e) History Activities - from the Teacher's Resource Book

3. Exercises: The teacher selects the pupil's exercises from:
   - (a) The Text - as listed in the Cross Reference Manual
   - (b) The Program - as printed in the Student Exercise Books
   - (c) Teacher's Own - other sources

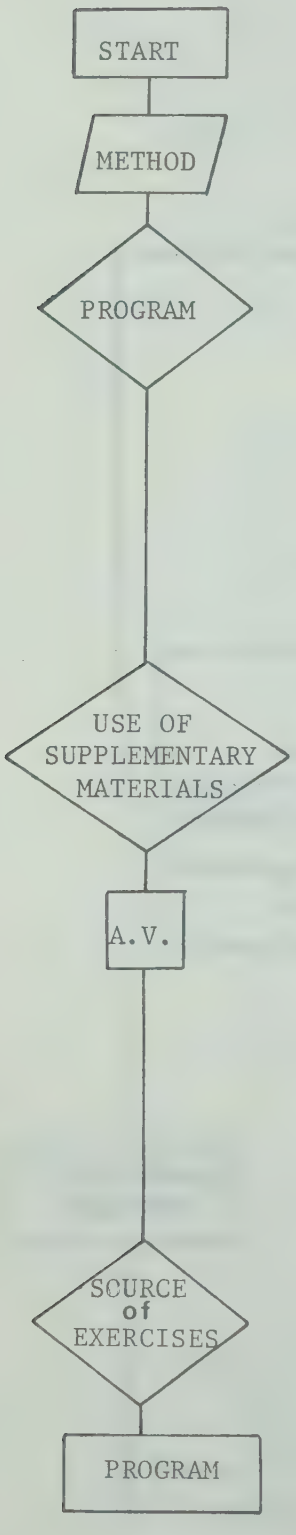
The teacher may, of course, use combinations of the various components of the program. Several such combinations, "pathways" are given on the following pages.

JUNIOR HIGH MATHEMATICS PROGRAM

DAILY INSTRUCTIONAL PATHWAYS



SAMPLE INSTRUCTIONAL PATHWAY: PROGRAM BOOKLET ROUTE



Class: Grade 7, Heterogeneous, 32 Students

Objective: 3, 4, Unit 2: Whole Numbers

Objective (3): Write any whole number in expanded form

Objective (4): Write any whole number in standard form given the expanded form

The teacher examines the Instructional Pathways Flow Chart and decides to follow the Program route.

The teacher reads the suggested development carefully and notes that Objectives 3 and 4 are treated together. He reflects on the material to be covered and the ability of his class and decides that one 40 minute period will be enough time to cover the topic.

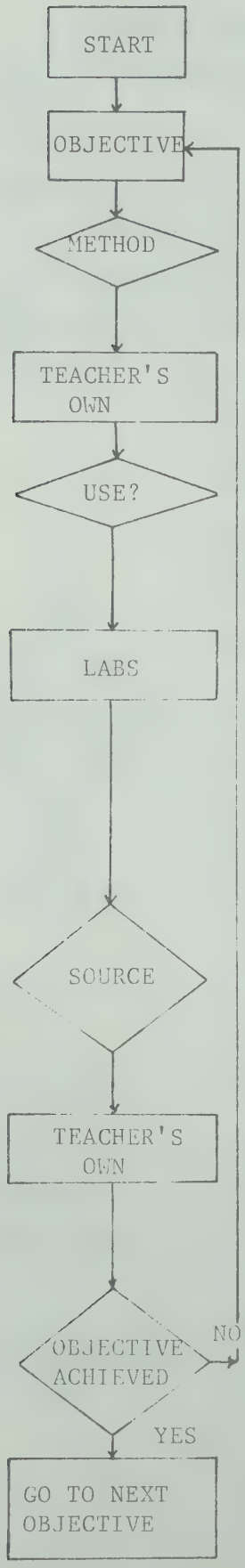
The teacher notes that an overhead transparency has been used in the development and decides to use a similar idea for supplementary materials for his class. He prepares a chart similar to the one in the development but includes more space for examples. He also prepares two more transparencies (to be used as overlays), one containing 4 examples from each objective and the other containing the correct answers to these examples. (That is, the teacher places on the second overhead sheet 4 whole numbers that the students are to expand. Also, he places 4 expanded numbers that the students are to write in standard form.)

After preparing the lesson itself, the teacher examines the set of student exercises. He notes that there are ten questions, but #8 and #9 have been recommended for use in classes with sufficient background. The teacher decides that the exercises as they appear are satisfactory, but he will omit #8 and #9.

Just before the class begins, the teacher will skim read the development to remind himself of some pertinent questions to ask during the presentation of the lesson.

Near the end of the class the teacher will ask for some students to recite their answers orally. On the basis of the success level of this question period, the teacher will evaluate whether or not the objectives have been met and can arrange planning for the next lesson with this class.

SAMPLE INSTRUCTIONAL PATHWAY: TEACHER DEVELOPED



Class: 1, Grade 9, Homogeneous low ability, 20 students

Objective: To teach derivation and use of surface area formulae for the simpler solids.

The discussion would probably be limited in scope to prisms and pyramids. The presentation would likely commence with derivation of area formulae for simple plane figures. Cut-outs and the use of grid paper would prove useful.

Model prisms and pyramids could be handled and observed to determine the distinguishing characteristics of each and the associated terminology. Collapsible cardboard models would be used to examine planar configurations. The latter would form the basis for a transition from "picture" formulae to algebraic formulae.

The teacher would likely want to prepare his own exercises bearing in mind the limited scope and sequence of his presentation.

SECTION II

The General Section contains a file of suggestions and classroom management techniques in graphic form which experienced teachers have found useful.

Each page contains a collage summarizing those ideas which make the classroom a pleasant and productive learning environment.

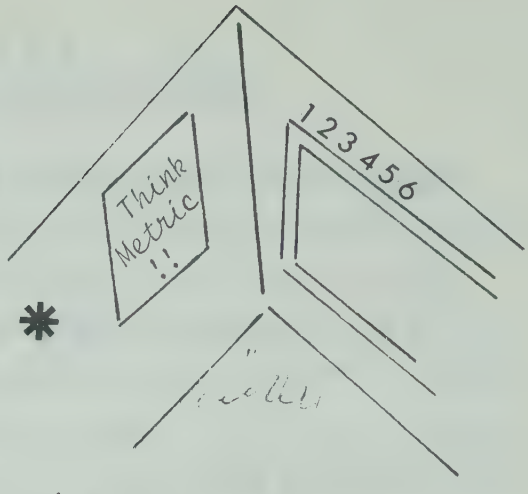
Included are pages on:

A. Class management
B. The ideal teacher
C. Discipline
D. Lesson planning
E. Questioning techniques
F. Motivation
G. Individual differences
H. Homework
I. Creativity
J. Recreational activities
K. Student evaluation
L. How to study mathematics

The contents are intended to be used as a resource and are not meant to be prescriptive.

A.

Classroom Management



1. Organized seating plan	Facilitates learning names Used to check absentees Gives students a feeling of security
2. Decorate room	Lends a mathematical atmosphere Recognized immediately as a "math" room
3. Get acquainted with your students	Use cumulative records early in the year Learn names Learn strengths and weaknesses of students
4. Plan carefully	Something purposeful for entire period Give directions carefully - students must know exactly what to do Give meaningful assignments Avoid long periods of time on any one type of activity Vary teaching methods to help stimulate interest and avoid boredom Keep your talking to a minimum Keep students actively involved Avoid sarcasm with students Ask questions that go beyond the straight recall type Incorporate meaningful contests to encourage teamwork and check understanding Develop questioning techniques that give all students an opportunity to answer the question at the same time - e.g. answer on scrap paper; walk around and check; discuss Let students explain and share unique solutions Let students help and teach each other when doing assignments Do not allow talking when you are teaching Give opportunity for meaningful guessing
5. Student Notebook	Insist on a neat and organized approach Notebooks should include: definitions, formulas, illustrative problems, examples and other basic work

B.

The Ideal Teacher

Objective

Helpful

Understanding

Interested

Self-controlled

Positive

Enthusiastic

Respectful

Firm

Encouraging

Co-operative

Tactful

THE

ORGANIZED

ORDERED

OPERATIONAL

IDEAL CLASSROOM

reserved

pleasant

praising

patient

fair

considerate

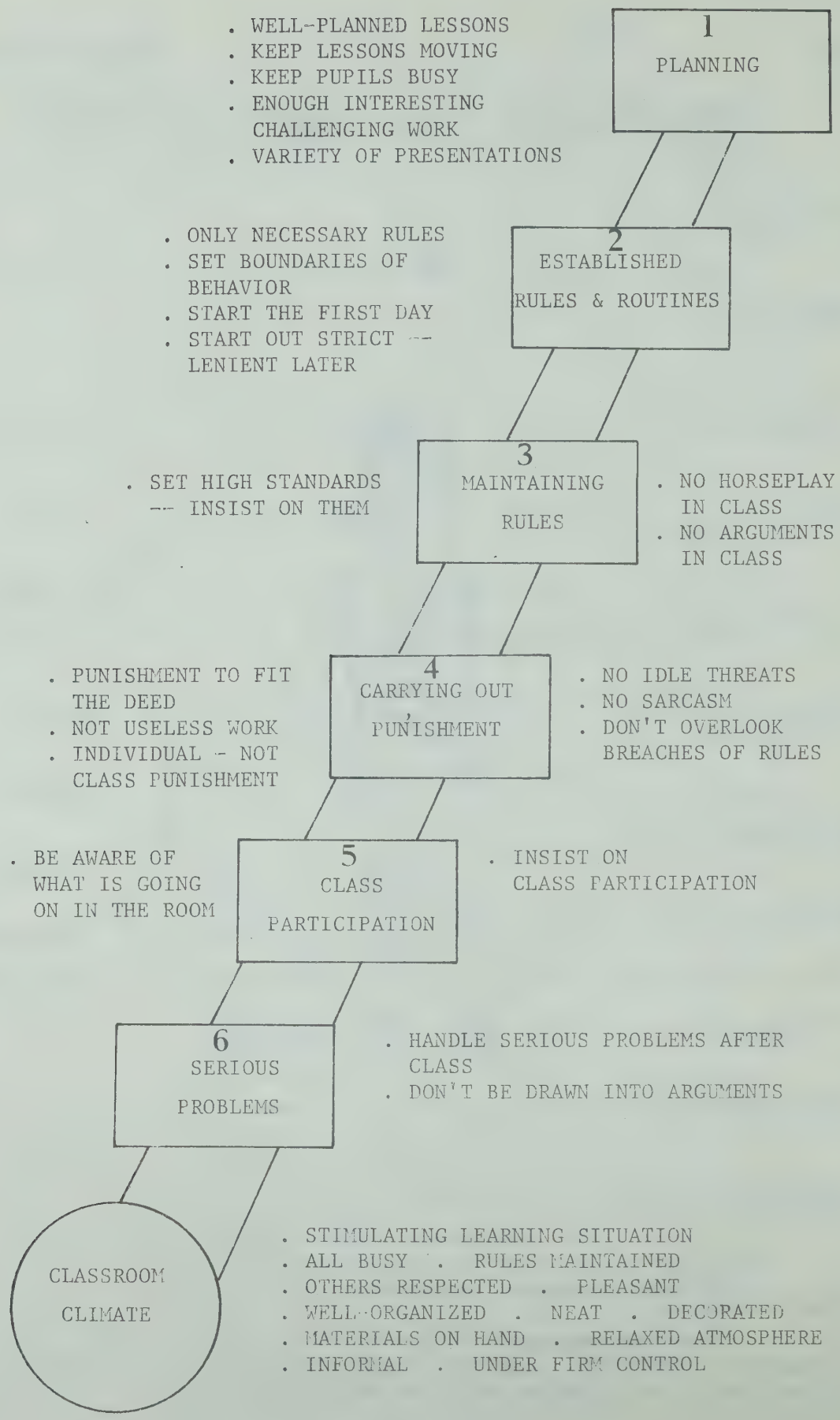
consistent

sense of humor

observant

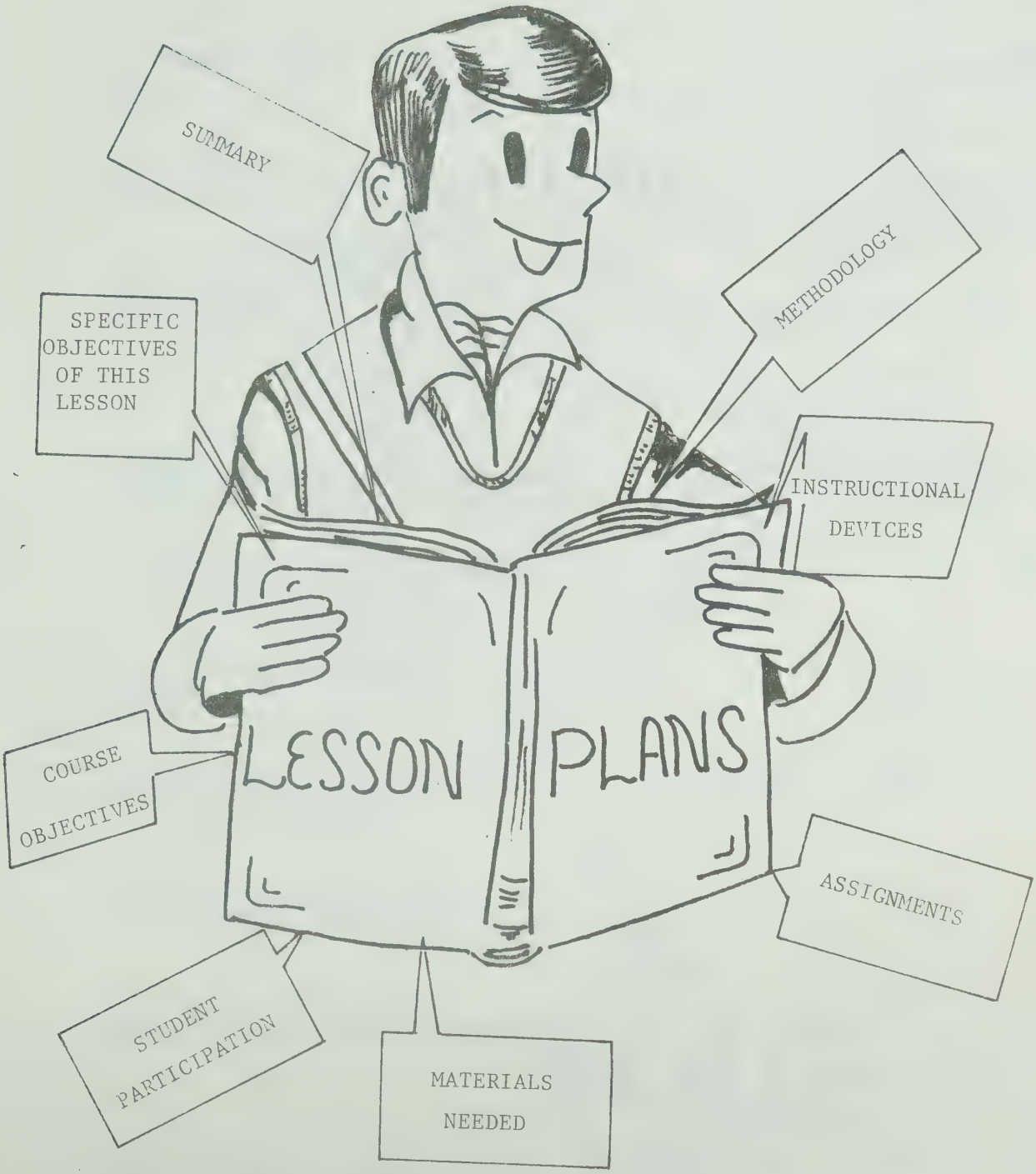
C.

DISCIPLINE



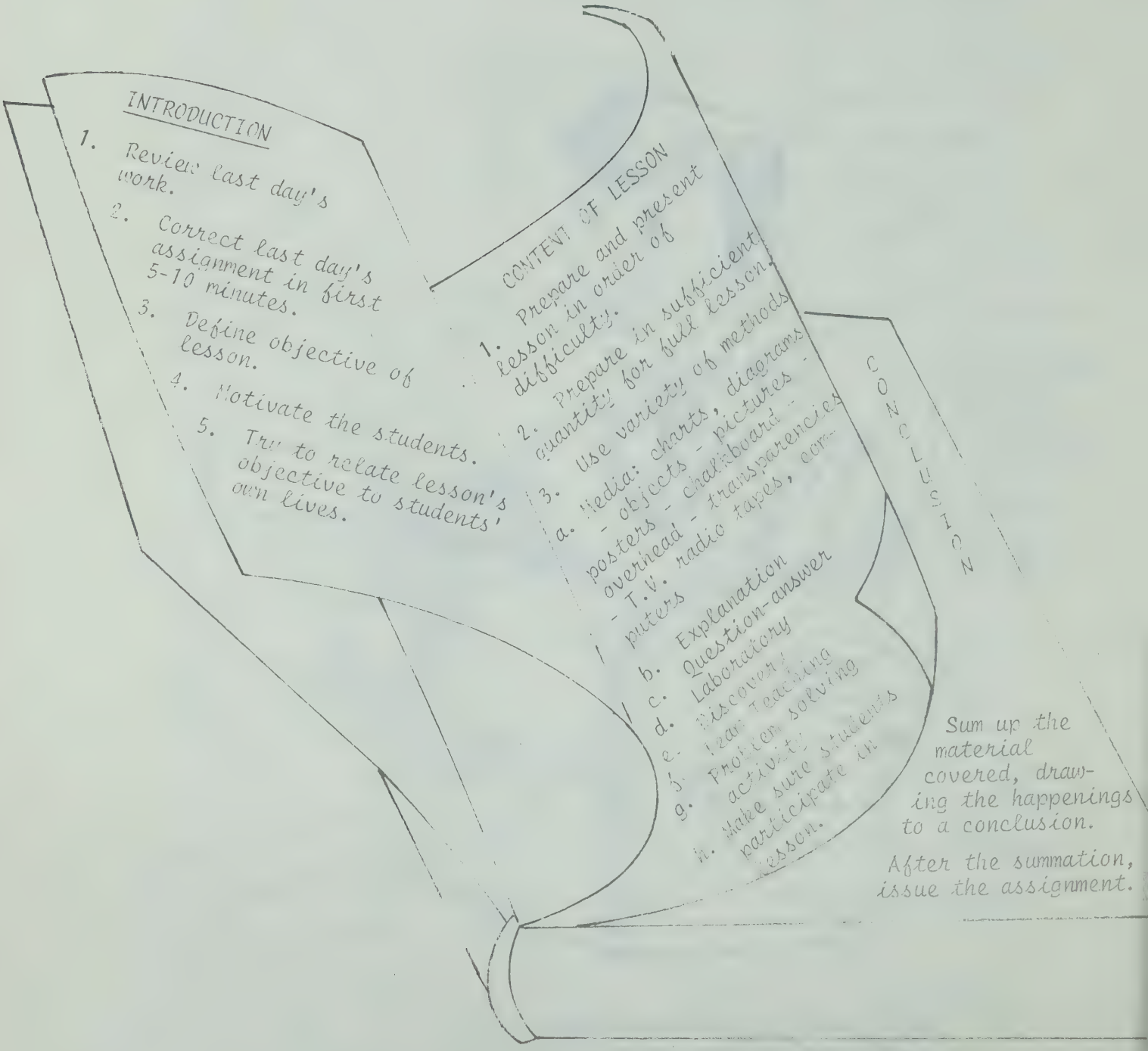
D.

1. General Lesson Plan Ingredients



D.

2. Daily Lesson Planning Details



E.

IS THERE A DEFINITE ANSWER TO THE QUESTION?

ARE QUESTIONS ON THE SUBJECT?

ARE QUESTIONS PURPOSEFUL?

CAN STUDENTS BE HEARD?

DO THE QUESTIONS STIMULATE THINKING?

IS CORRECT GRAMMAR USED?

DOES YOUR DISCUSSION REACH A CONCLUSION?

DO YOU PLAN YOUR QUESTIONS?

DO YOU INSIST ON INDIVIDUAL RESPONSES?

QUESTIONING & DISCUSSION

DO YOU USE SIMPLE WORDS?

DO YOUR QUESTIONS PROMOTE THINKING? -ANSWERABLE BY MORE THAN YES OR NO!

DO YOU CALL ON STUDENTS BY NAME?

DO YOU FIT THE QUESTION TO THE STUDENT'S ABILITY?

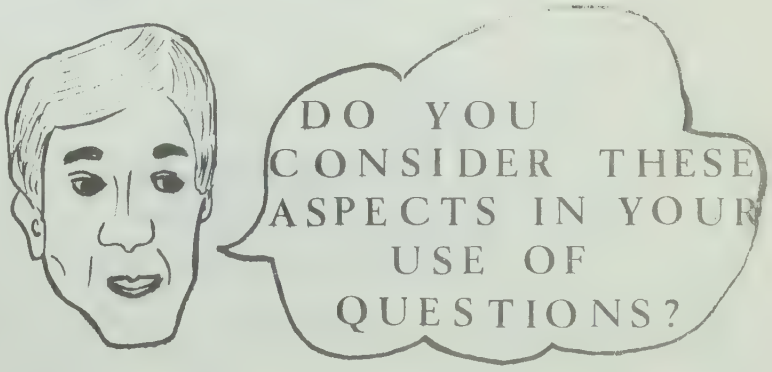
DO YOU INSIST ON EVERYONE'S ATTENTION?

DO YOU CALL ON INATTENTIVE STUDENTS TO GAIN THEIR ATTENTION?

DO YOU INVOLVE ALL STUDENTS IN THE DISCUSSION?

DO YOU GIVE STUDENTS TIME TO THINK BEFORE ANSWERING?

DO YOU ALLOW MORE THAN ONE PERSON TO TALK AT THE SAME TIME?



ARE QUESTIONS THOUGHT-PROVOKING?

H O W ? W H Y ? W H A T ?

F. MOTIVATION

PROVIDE SUCCESS OPPORTUNITIES

COMMUNICATE EFFECTIVELY

STUDENT ⟺ TEACHER

BE AVAILABLE WHEN STUDENTS NEED YOU

STUDENT NEEDS ASSURANCE OF YOUR INTEREST IN HIS WORTH

HUMAN CONTACT

- A WINK
- A GREETING
- A COMMENDATION

ENRICHMENT - - -

- "CHALLENGING PROBLEM" CORNER
- GAMES
- MATH CONTEST
- STUDENT MAINTAINED DISPLAY CASE
- MATH CLUB

USE A VARIED APPROACH

DESCRIBE GOALS IN BRIEF

RELATED TO:

- ANTECEDENT SKILLS
- ASSOCIATED IDEAS

KINDLE AN INTEREST

G.

INDIVIDUAL DIFFERENCES

HAVE VARIED DAILY ASSIGNMENTS -- MANY EASY ONES FOR THE SLOW -- A FEW MORE CHALLENGING ONES FOR THE BRIGHT

SHOW INTEREST IN THE STUDENT AS AN INDIVIDUAL: HIS HOBBIES, WORK, FAMILY BACKGROUND

ENCOURAGE EXCELLENCE -- AVOID THE FRUSTRATIONS OF FAILURE -- NEVER ALLOW IT TO BE "SMART", TO BE STUPID, OR APATHETIC

USE VARIED METHODS OF INSTRUCTION -- LECTURE, LABORATORY, PROJECTS, DISCOVERY, PROBLEM-SOLVING

TAKE CLASSROOM TIME FOR MOTIVATION, APPRECIATION, ATTITUDE-DEVELOPING ACTIVITIES

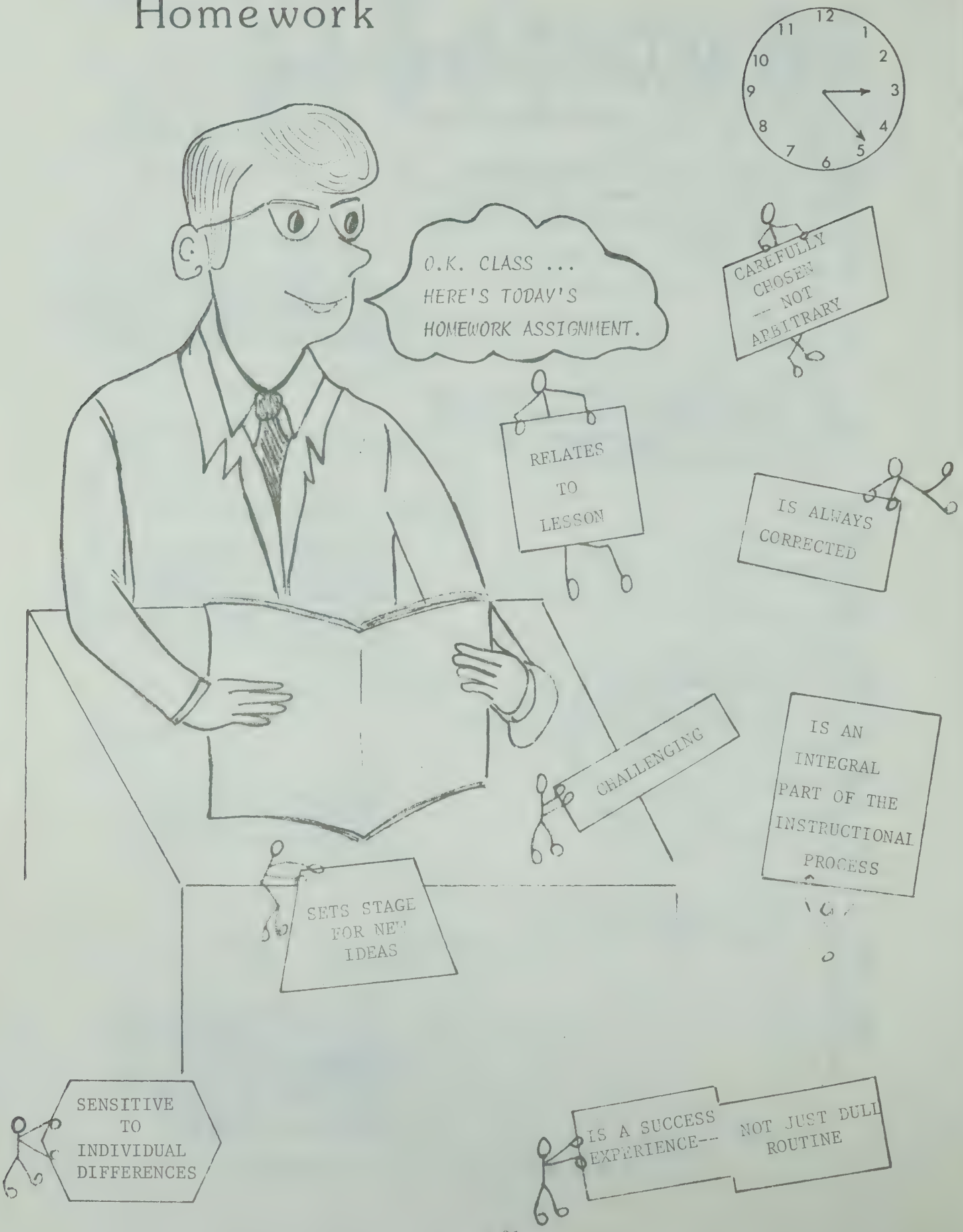
ESTABLISH A LEVEL OF PARTICIPATION RELATED TO THE PUPIL'S CAPABILITIES

PROVIDE OPPORTUNITIES FOR THE SLOW TO RECEIVE REMEDIAL INSTRUCTION -- NOON, AFTER SCHOOL

VARY STUDENT PARTICIPATION IN CLASS -- SPEAK TO EACH STUDENT EVERY DAY -- ASK QUESTIONS THEY CAN ANSWER -- ACCEPT ALL ANSWERS AS LEGITIMATE RESPONSES.

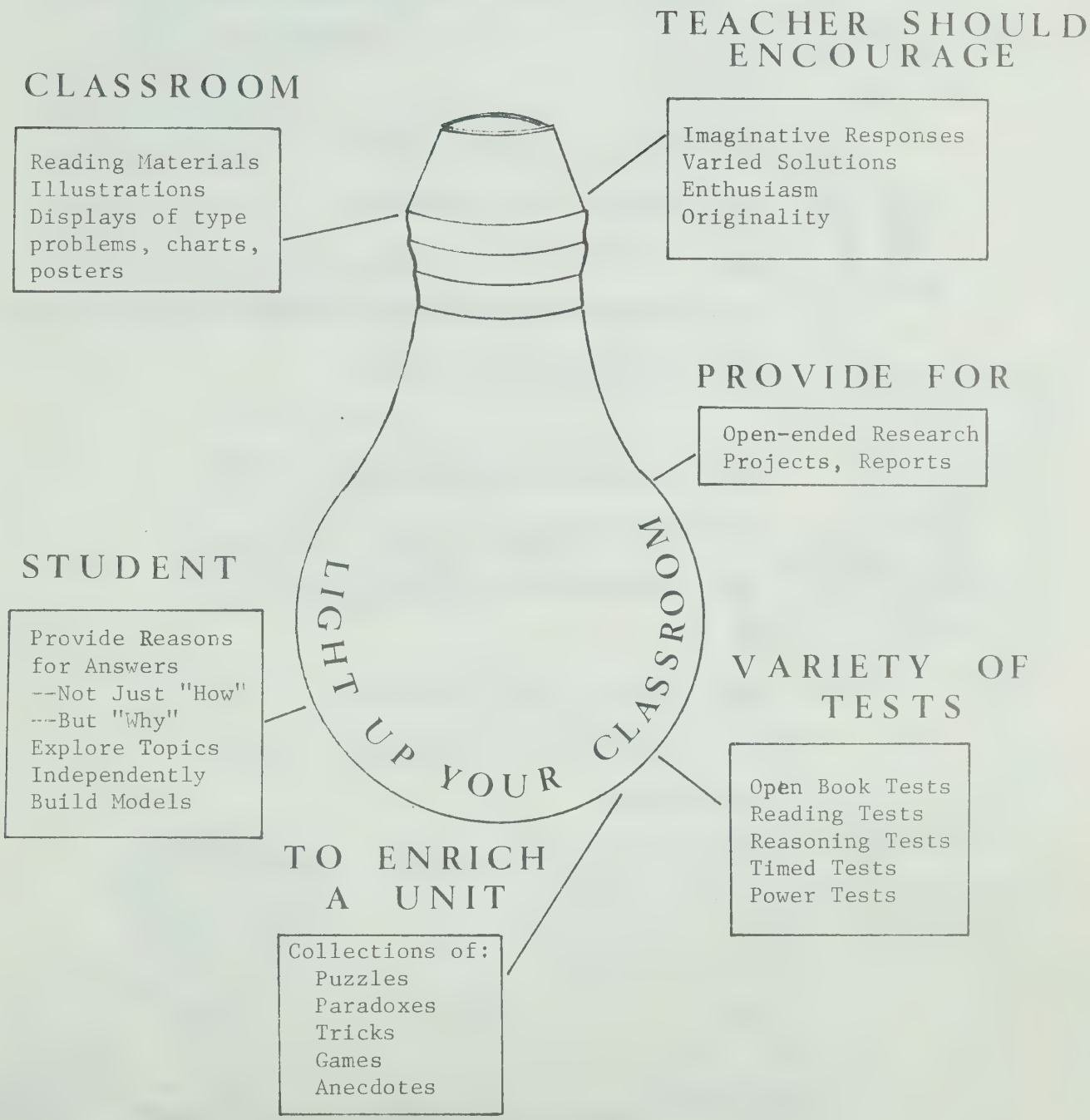
H.

Homework


O.K. CLASS ... HERE'S TODAY'S HOMEWORK ASSIGNMENT.
CAREFULLY CHOSEN --- NOT ARBITRARY
RELATES TO LESSON
IS ALWAYS CORRECTED
CHALLENGING
IS AN INTEGRAL PART OF THE INSTRUCTIONAL PROCESS
SETS STAGE FOR NEW IDEAS
SENSITIVE TO INDIVIDUAL DIFFERENCES
IS A SUCCESS EXPERIENCE--- NOT JUST DULL ROUTINE

I.

Creativity In The Classroom



J.

Recreational Activities

USE WITH THE CORE TO
- INTRODUCE
- UNDERSCORE
- EXTEND

? WHY

- ALTERNATE LEARNING MODE
- STIMULATE PARTICIPATION
- REINFORCE CONCEPTS, RULES, SKILLS
- DEVELOPS INDEPENDENT AND COOPERATIVE LEARNING SKILLS
- PROVIDES PUPIL SATISFACTION

WHEN?

- INCENTIVE FOR FINISHING WORK
- BREAK FROM REGULAR CLASS ROUTINE
- REVIEW--REINFORCE CONCEPTS, SKILLS

WHAT ?

- TEACHER-, PUPIL-MADE GAMES
- COMMERCIALLY PREPARED GAMES, PUZZLES
- CONTESTS
- POSTERS NUMBER TRICKS ALPHAMETICS

WARNING

- USE WITH CAUTION. DO NOT OVERDO.

K.

Evaluation

THE INSTRUMENT

IS IT REPRESENTATIVE OF THE CONTENT COVERED?

DOES THE PROPORTION OF THE ITEMS REFLECT THE INVESTED TEACHING TIME?

IS THE TEST MERELY A TEST OF READING ABILITY?

TO MAINTAIN INTEREST, IS A VARIETY OF TEST FORMAT CONSIDERED?

PUBLICITY

ARE TESTS (DATES AND TOPICS) PUBLICIZED IN ADVANCE?

ARE STUDENTS FAMILIAR WITH TEACHER'S LONG-TERM EVALUATION POLICY?

DAY-TO-DAY CREDIT

DOES SOME PORTION OF THE REPORT CARD MARK REFLECT DAY-TO-DAY ACHIEVEMENT (MINOR TESTS, HOMEWORK, CLASSWORK, SPECIAL PROJECTS)?

Evaluation - cont'd.

AS A DIAGNOSTIC TOOL

CURRENT SKILLS

IS MASTERY OF CURRENT SKILLS CHECKED FREQUENTLY (WEEKLY, BI-WEEKLY) OR IS MASTERY SIMPLY ASSUMED?

TEACHER-MARKED UNIT TESTS

ARE THESE USED AS AN OCCASION TO POINT OUT PECULIAR AND COMMON MISUNDERSTANDINGS?

ARE AREAS REQUIRING RE-TEACHING NOTED?

IMMEDIATE REPEAT TESTS

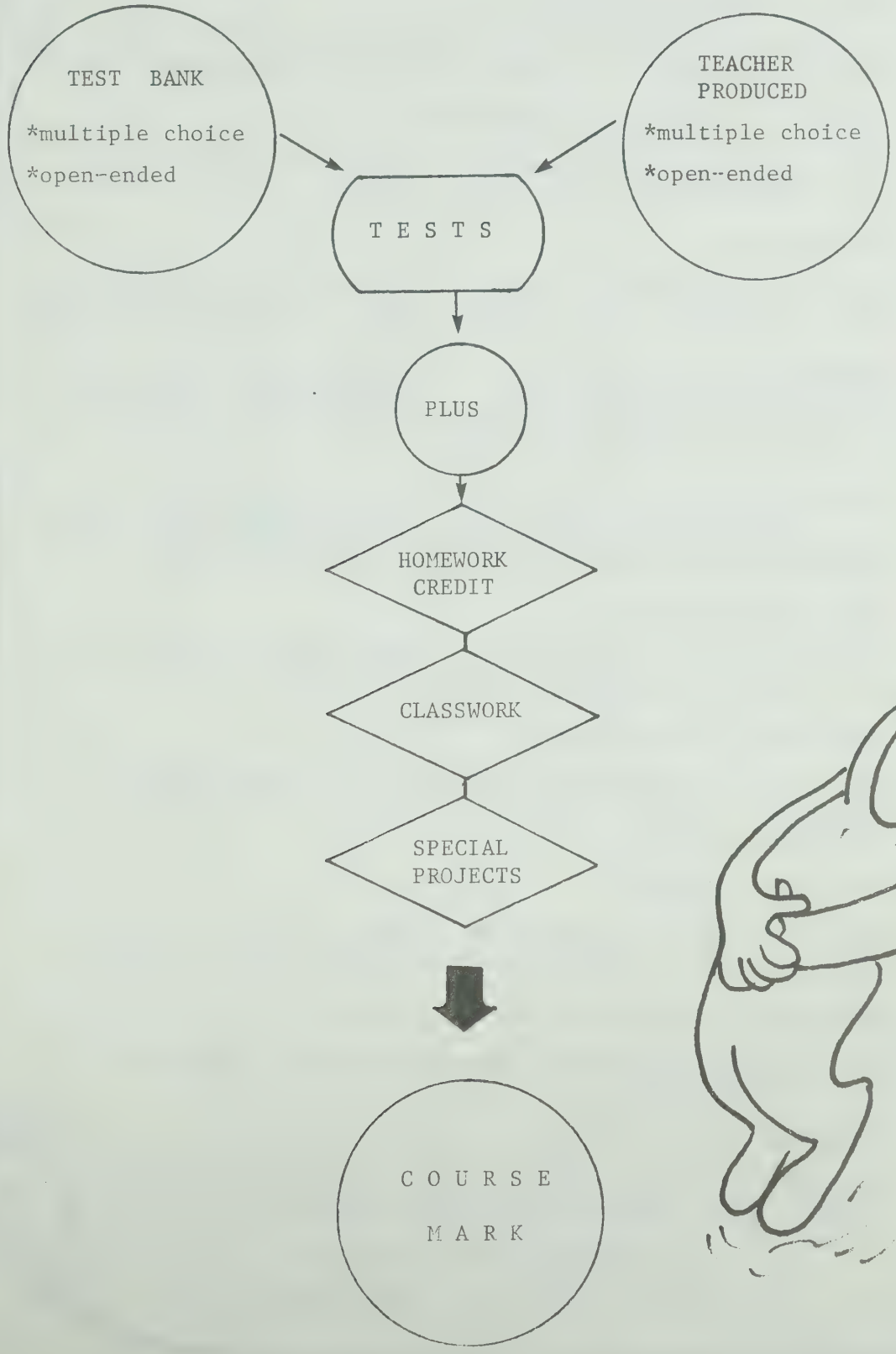
WHICH STUDENTS PROFIT FROM A SELF-ANALYSIS OF AN EARLIER PERFORMANCE?

NOTE BOOK CHECKS

ARE NOTE BOOKS WELL KEPT AND ORGANIZED SO THAT THEY SERVICE THE INTENDED PURPOSE?

Evaluation Suggestion:

AN EVALUATION PROGRAM VARIES FROM SCHOOL TO SCHOOL BUT MAY INCLUDE THE FOLLOWING COMPONENTS:



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How To Study Mathematics

THE TEN COMMANDMENTS

1. READ CAREFULLY AND DELIBERATELY

   Thou shalt slowly consider each word and symbol, for many important thoughts are condensed into a few statements.

2. THINK WITH PENCIL AND SCRATCH PAPER

   Thou shalt get started with pencil and paper, digging out the facts, and testing out the ideas on paper.

3. BE INDEPENDENT

   Thou shalt work without assistance, asking questions only when they are necessary, but not being afraid of asking when in doubt.

4. LISTEN IN CLASS

   Thou shalt pay careful attention while the basic principles and the fine points are being discussed.

5. PERSEVERE

   Thou shalt stick with the topic even though frustrated because understanding and insight do not come easily and early.

6. TAKE TIME TO REFLECT

   Thou shalt think about the ideas and come back to them, for it takes time for some ideas to "soak in".

7. CONCENTRATE ON FUNDAMENTALS

   Thou shalt concentrate thy studies on the basic principles and definitions and their applications and not try to learn by memorizing examples.

8. BE NEAT AND ACCURATE

   Thou shalt practice accuracy and neatness until they become a habit, keeping thy work well-organized and readily available.

9. TAKE TIME TO DO YOUR WORK AND DO IT ON TIME

   Thou shalt do thy homework regularly and shall diligently catch up on the work missed.

10. BECOME ACTIVELY INVOLVED

    Thou shalt be mentally alert in class and shall put forth a strong, steady effort, doing the work required.

AND THOU SHALT HAVE THY REWARD

FOR TRULY THOU SHALT HAVE LEARNED MATHEMATICS

Teacher Notes

Teacher Notes

AUDIO-VISUAL REFERENCE GUIDE

Teacher

An audio-visual reference guide was developed as a component of the Junior High Mathematics Program due to the increased availability of audio-visual materials. Many types of materials were previewed - films, film loops, film strips, audio-video tapes, slides, audio-tapes, games and kits. The evaluation criteria were appropriateness of content, interest value, quality and difficulty level. An overall rating of excellent, very good, good, more appropriate for a mathematics option or enrichment topic, or not recommended was given. Appropriate materials were referenced to grade, level and objective.

The contents of the guide are:

A. Audio-visual materials which relate to a specific junior high objective appear in order of grade, unit and objective number.

B. Audio-visual materials which are more appropriate for use in a math option or as an enrichment topic are listed alphabetically.

Appendix I

Addresses of publishers or distributors of the audio-visual materials referred to above are listed.

Abbreviations:

A.C.	Activity Cards	F.S.	Film Strip
A.S.	Activity Sheets	G.	Game
A.T.	Audio Tape	K.	Kit
A.V.T.	Audio Video Tape	N.B.	Note Book
C.	Cassette	P.L.	Programmed Learning Aid
F.	Film	R.	Record
F.L.	Film Loop	S.	Slides

GRADE: 7 UNIT: Set Theory

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,2, 3	F.S.	The Language of Sets	SVE	'62	C	35 f	1,2,3	V.G.	Only first 27 frames are applicable as rest covers union and intersection.
1,2, 4,8	F.S.	Sets and Set Operations	Jam Handy Org.	'68	C	37 f	2	G	First 23 frames are applicable as rest covers complement, unions & intersections.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,5	F.S.	Number Line	Ed.Proj. Corp.	'67	C		1	G	Good
2	F.S.	The Why of Simplifying Expressions	F.O.M.	'63	C	39 f	2	G	Introduction for Gr. 7
2,3	A.V.T.	What are Numbers? Math Relationships	ACCESS		C	15 min.	1 2 3	VG	History of Numbers Expanded form of base 10 nos.
2,6,13	F.S.	Missing Factor-The World of Whole Nos.	B.F.A. Ed. Media	'69	C	57 f	2	VG	Colorful & presents interesting problems.
3	A.V.T.	Alice in Numberland	ACCESS		BW	10 min.	2 3	VG	Discusses expanded notation & history of no. systems. Also enrichment.
3,	F.S.	Place Value	Ed.Proj. Corp.	'68	C	45 f	1	VG	Use of ones, tens & hundreds place-good development for low students.
3,4,	C,N.B. F.S.	Development of our No. System	Viewlex Inc.	'73		15 min.	1 2	G	Follows filmstrip with same name-good for individualized instruction.
3,5,6	F.S.	Our Decimal Numeral System	McGraw Hill	'63	C	35 f	2	VG	Shows processes of regrouping operations with whole nos. Does not use terminology.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avge 3. gifted	Rating Exc. V.Good Good	Comments
5	F.S.	Place Value	Ed.Proj. Corp.	'69	C	40 f	1	G	Good for low level students.
5	G	Cal-Q-late Math Aid	Gage				1 2 3	VG	A real brain teaser. Practice rapid calculation & develop abstract reasoning.
5	G	Matrix	Dual Puzzle Co.				1 2	G	Magic Square type game-good for rapid addition.
5	G	Addo Arithmetic game	Kenworthy Educ.Serv.	'53			1	G	Very basic- used with low level students.
5	G	Mad Adder	L & M Ent.	'73			1	G	Puzzle wheel adding numbers. Individual game.
5	G	Magic Squares	Task-master				1	G	Magic square with moveable plastic squares. Is expensive.
5	G	Fore	I.T.M. Ed. Research	'71			2	VG	Adding & Subtracting whole nos.- card game.
5	G	Play Ball	I.T.M.	'71			1	G	Solitaire or group card game of adding & subtracting whole nos. up to 10.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
5,6	G	Strikes & Spares	I.T.M.	'71			1,2,3	VG	-card game -add, subtract & multiply whole nos.
5,6	G	Touch Down	I.T.M.	'71			2	VG	-card game -add, subtract & multiply whole nos.
5,6	G	Numo	Midwest Publ.	'69			1	G	Bingo type game. Basic operations.
5,6	G	B.J.'s Mathgames Mult.&Div.	Scholar's Choice	'75			1,2	G	Basic operations. Good quality fairly high interest.
5,6	G	Heads Up!	Milton Bradley	'66			1,2	G	Computations with whole nos. Form equation on playing board using nos. tossed on a dice
5,6	G	Sum Up	3M Co.	'70			1,2	VG	Card game- computation with whole nos.
5,6	G	Quations	A.&M. Assoc.	'72			1,2,3	G	Board game similar to scrabble. Computation.
5,6	G	Basic Block It	Creative Teaching Assoc.	'71			1,2	G	2-4 players add & multipl. of whole nos.
5,6	G	Math Match	Creative Publ.	'71			1,2	VG	Card games involving 4 operations with whole nos.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
5,6	G	Absub-muldi	Educ. Insights Inc.				2	Exc.	Played as checkers. Computation required when jumping.
5,6	G	Arithma Games	Pawnee Pub. Co.	'72			1	G	Dice game remedial work.
5,6, 11	G	Triscore	Creative Teaching Assoc.	'71			1,2	VG	2-4 players using several computational skills.
5,6, 11,14	G	Equations	Wft'n Proof				3	VG	Enrichment for gifted students.
5,8, 13,15	F.S.	The Missing Addend	B.F.A. Ed. Media	'69	C	44 f	1	VG	Colorful- but very basic.
5,13 15	F.S.	Sporting Mathematics	B.F.A.	'69	C	38 f	2	VG	Interesting- practical situations.
6	F	The Remain-der in Div.	Gen. Learning Corp. NCTM	'70	C	8 min	1,2	VG	Discusses the meaning of the remainder in division.
6	F.S.	Multip. Computation I	Ed.Proj. Corp.	'69	C	40 f	2	VG	Too much for one lesson. Uses term grouping rather than asso-ciative.
6	F.S.	Multipl. Computation II	Ed.Proj. Corp.	'69	C	43 f	2	G	Use of distributive property.

GRADE: 7 UNIT: Whole Numbers

Obj No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
6	G	Multifacto Product	Scott Foresman	'71			1,2	G	2-6 people review of mult. factors.
6	G	Fascinating Factors	Creative Teaching Assoc.	'75			1	G	Bingo type game using 2 factors to find a product
6	G	Divide & Conquer	Creative Teaching Assoc.	'72			2	VG	2-3 players, division of whole numbers.
6	G	Multifax & Quotient	Creative Teaching Assoc.	'72			1,2,3	G	2-6 players, review of multipl. & div.
6	G	The Rallying Remainders	Creative Teaching Assoc.	'72			1	G	2-30 players, review of div. giving a remainder
6	G	Divide & Decide	Creative Teaching Assoc.	'72			1	G	2 players, game board- very simple division.
6	G	Multipl. Flash Cards	Kenworthy Ed.Serv.				1	G	Self teaching mult. facts
6	G	Orbiting the Earth Div.	Gage	'69			1	G	Good for remedial work.
6	G	Orbit Earth Multipl.	Gage	'69			1	G	Rather elementary but may be good for remedial work.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
6	G	Multo Arith. Game	Kenworthy Ed.Serv.	'55			1	G	Very basic mult. facts
6	G	Tic Tac Times	Creative Teaching Assoc.	'71			1	G	2 players, multiplication
6	G	Tic Tac Divide	Creative Teaching Assoc.	'72			1	G	2 players, division
6,7	F.S.	Multiplicative Identity	FOM	'62	C	39 f	2	G	
8	F.S.	Number Fields	FOM	'67	C	41 f	2	G	First 31 frames suitable for Grade 7 with properties.
8	F.S.	Identity & Inverse Properties	SVE	'63	C		2	G	Only first 6 frames good for identity element.
10	F.S.	Rearrangement therom of Multipl.	FOM	'68	C	40 f	2	G	Commutative & associative Properties of multipl.
10	F.S.	Addition Algorithm	Ed.Proj. Corp.	'68	C	35 f	1	G	Use of assoc. property to make adding easier.
11	F.S.	Order of Operations	Univ.Ed. &Vis.Arts	'70	C	44 f	2	VG	Order of operations & use of parentheses. Good review.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
11,12, 13	F.	Exploitation 7 Errors	General Learning Corp.	'70	C	10 min	1,2,3,	VG	Good interest level.
7	F.S.	Subtraction combinations through 19	Ed.Proj. Corp.	'67	C		1	G	Balance approach for solving equations A + x = B
13	F.S.	Equations & Equivalent Equations	FOM	'61	C	39 f	2	VG	Solution of equations using inverse. Uses the term root.
13	F.S.	Open Sentences	SVE	'62	C	40 f	2	VG	End of filmstrip gets too complicated for Grade 7.
13,15	F.S.	Bowler's Mathematics	BFA Ed. Media	'69	C	72 f	2	VG	Gives an explanation of how to score 10 pin bowling - very interesting.
13,15	F.S.	The Doughnut Stand	BFA Ed. Media	'69	C	36 f	2	VG	Interesting problem situations. Well organized.
15	F.S.	Direct Variation	FOM	'65	C	40 f	2,3	VG	Appropriate and interesting.
15	F.S.	Inverse Variation	FOM	'67	C	38 f	3	VG	Appropriate & interesting for better students.

GRADE: 7 UNIT: Whole Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
16,17	F.S.	Number Sentences	FOM	'68	C	37 f	1	G	Basic introduction to writing number sentences for word problems and vice versa.
18	G	Problem Solving Bingo	Creative Teaching Assoc.	'74			1	VG	Bingo type game- recognize operation to use to solve a problem. Also uses fractions & decimals.

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
A-1	G	Prime Drag	Creative Publ.	'69			1 2 3	E	High interest board game-students must distinguish between primes & composites
A-1	G	Prime Factor		'71			2	VG	Primes, composites & factors
A-1, 2	F.S. C N.B.	Fund. operations-mult. factors & factoring numbers	Viewlex	'72	C	2sf 15 min	1 2	E	C., N.B. may be used for individual instruction. Excellent for factoring objectives
A-1, 2,3	F.S.	Factoring & Primes	Univ. Ed. & Visual Arts		C		2	VG	Good examples of factoring-good procedure used
A-1, 2,3	F.S.	Factors & Primes	Ed. Proj. Corp.	'69	C	39f	2	E	Corresponds with junior high objectives
A-1, 2,3, 4	F.S. C	Complete Factorization	Ed. Dir. Inc.	'72	C	52f	1 2 3	VG	Very appropriate
A-1, 2,4	F.S.	Number Theory	Ed. Proj. Corp.	'69	C	39f	2	VG	Phase 1-development of factors, G.C.F. and set of factors, Phase 2-multiple & factor relationship.
A-1, 3	G	Prime Pyramid	Creative Teaching Assoc.	'74			1 2	G	4 players - multiply prime numbers to form composite products

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
A-1, 3	G	Prime-O	Creative Teaching Assoc.	'71			1 2 3	VG	Card game-review of prime and composite numbers and prime factorization
A-1, 5	P.L. A.S.	Arithmetic Involve-ment Multiples	MacMillan	'73		40	1 2	VG	Programmed learning aid - individual instruction, multiples & L.C.M.
A-2	G	Multifacto Products	Scott Foresman	'71			1 2	G	2-6 people, review of factoring
A-3 (i)	F.S.	Missing Factor	B.F.A. Ed. Media	'69	C	57f	2	VG	Colorful, with interesting problems
A-4 5	F.L.	HCF & LCM as Inter-section & Union of Sets	N.F.B.	'66	C	5 min	2 3	VG	
B-1	F.S. C	Fractions equal to, or greater than one	S.V.E.	'71	C	53f	1 2	VG	Mixed numerals and improper fractions & how to rewrite them
B-1	F	Comparing rational numbers	General Learning Corp.	'70	C	8 min	2	G	Review of equivalent fractions
B-1 2,3, 7,10	AVT	Fractions	ACCESS		B/W	15 min	1 2 3	E	Not S.I. Excellent introduction to, & review of fractions

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-1, 3	P.L A.S.	Introd. to Fractions	Macmillan	'74		40f	1 2	VG	Concept of fractions-programmed learning aid which may be used for individual instruction
B-1 3	P.L. P.S.	Fractions Word Problems & Improper Fractions	Macmillan	'74		40f	1 2	VG	Use of fractions in concrete situations, improper fractions
B-1, 3	F.S. C	What are Fractions?	S.V.E.	'71	C	59f	1 2	VG	Basic introduction to meaning of fractions - part of a whole, or part of a group
B-1, 3,7	G	Action Fractions	Moyer				1 2 3	VG	Use of fractions
B-1, 7	FS C	Equivalent Fractions	S.V.E.	'71	C	62f	1 2	VG	Explanation of equivalent fractions and how to form them
B-1, 7	G	Num-O	Midwest Publ.	'69			1 2	VG	Bingo type game - basic fractions, equivalent fractions, mixed numerals
B-1, 7,10, 11	G	Fractions	Creative Teaching Assoc.	'71			2 3		2 players, review of equivalent fractions, mult. inverse, adding, subtracting

GRADE: 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publisher	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Excellent Very Good Good	Comments
B-1, 8,10	G	Action Fractions -Squares	School House Visuals	'69			2	G	Equivalent fractions, adding & subtracting L.C.D., game board
B-1, 9	F.S. C	Simplifying Fractions	S.V.E.	'71	C	46f	1 2	VG	Reduces fractions to basic form by using G.C.F.
B-1, 10	G	Fractional Parts	Creative Teaching Assoc.	'73			1	G	Bingo-type game Equivalent fractions adding & subtracting
B-1 10	G	Triplettes	Activity Resources Co.	'72			1 2 3	VG	Card game, equivalent fractions, adding fractions, order of fractions
B-1, 10, 11	G	Mr. Math Fraction	Creative Teaching Assoc.				3	G	Board game - equivalent fractions, mult. inverse, adding & subtracting fractions
B-1, 10, 12	G	One-Fraction Game	Creative Teaching Assoc.	'72			1 2 3	VG	Card game - equivalent fractions, adding, subtracting, multiplying fractions, various levels
B-1, 12	F.S. C	Multiplication of Fractions & Mixed Numbers	S.V.E.	'72	C	59f	2	VG	Requires more than 1 period, more examples & drill required

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frame	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-6, 11, 14	F.S. C	Properties of Operations, Part I	S.V.E.	'72	C	45 f	2	G	Commutative and associative property of addition, additive identity, property of one, reciprocals
B-6, 14	F.S. C	Properties of Operations, Part II	S.V.E.	'72	C	51 f	2	G	Commutative and associative property of multiplication, multiplicative identity, zero property of multiplication, & distributive property
B-7	P.L. A.S.	Equivalent Fractions	Macmillan	'74		40 f	1 2	VG	Definition of and rules for generating equivalent fractions
B-8	G	Determining Denominators	Creative Teaching Assoc.	'74			1	G	2 players - find common denominators of fractions - largest C.D. is 30
B-8 10	F.S. C	Addition & Subtraction of Fractional Numbers	S.V.E.	'71	C	57 f	1 2	VG	Illustrates that only numerators are added if denominators are common - proper fractions

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-8, 10, 11, 12	F.S.	Operations with Fractions	McGraw-Hill	'63	C	33f	2	VG	Excellent content but determining common denominators must be explained
B-9	P.L. A.S.	Reducing Fractions & Mixed Numbers	Macmillan	'74		40f	1 2	VG	Definition of: lowest terms, common factor, mixed numbers. Exercises good for individual instruction
B-10	P.L. A.S.	Addition & Subtraction of Fractions	Macmillan	'74		40f	1	VG	Individual instruction learning aid
B-10	P.L. A.S.	Unlike Denominators	Macmillan	'74		40f	1 2	VG	Individual instruction learning aid - finding of common denominators & adding & subtracting fractions
B-10	F	Subtracting with Fractions	Gen. Learning Corp. NCTM	'70	C	11 min	1 2	VG	Interesting format, British units of measurement
B-10	F	Subtracting with Mixed Numerals	Gen. Learning Corp. NCTM	'70	C	9 min	1 2	VG	Interesting format, subtracting mixed numbers by borrowing
B-10	F.S.	Addition & Subtraction of Fractions	Univ. Ed. & Visual Arts	'70	C	48f	1	G	Clear & straight-forward, good introduction

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-10	F.S. C	Addition & Subtraction of Mixed Fractions	S.V.E.	'71	C	61f	2	G	Subtraction-borrows from whole numbers if necessary. Too complex for low level
B-10	G	Here to There	Scott Foresman	'71			1 2 3	VG	2 players, board game, adding & subtracting of fractions
B-10	G	Arithma Game	Pawnee Publ. Co.	'73			1	G	2 - 6 players, adding & subtracting of fractions
B-10	F.L.	Addition of Fractional Numbers	Macmillan	'69	C	3 min	1 2	VG	Forming common denominators & adding fractions
B-10 -12	P.L. A.S.	Practice with Fractions	Macmillan	'74		40f	1 2	VG	Practice with 4 operations. Includes improper, mixed numbers. Individual instruction.
B-10 2	G	Adsubmuldi Fractions	Education-al Insights				2	E	Played as checkers, computations required when jumping
B-11 -12	P.L. A.S.	Multiplica-tion & Division of Fractions	Macmillan	'74		40f	1 2	VG	Difference of reciprocal, rules for mult. & dividing, individual instruction

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-12	P.L. A.S.	Multiplication & Division of Mixed Numbers	Macmillan	'74		40f	1 2	VG	Individual instruction, programmed learning aid
B-12	F.S. C	Division of Fractions & Mixed Numerals	S.V.E.	'72	C	50f	2	VG	Illustrates division of fractions with diagrams. Frames 42-50 use a C.D. method
B-12	F.L.	Division of Fractional Numbers	Macmillan	'70	C	3 min	1 2	G	States rule for division but gives no explanation
B-12	F	Dividing with Fractions - Reciprocal Method	General Learning Corp.	'70	C	12 min	2	G	Explanation and intuitive proof of reciprocal method. Is fairly complicated
B-14	F.S.	The Distributive Property	S.V.E.	'65	C	30f	2	VG	Distributive property involving whole no's & fractions
B-16	F	Between Rational Numbers	General Learning Corp.	'70	C	11 min	1 2	VG	Uses common denominators to find a rational number between any 2 rationals. Interesting.

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-16	F.S.	Equalities & Inequalities	Univ. Ed. & Visual Arts	'70	C	46f	2	VG	Clear, concise, & colorful. Equality & inequality information well developed.
B-16	F.S. C	Order of Fractional Numbers	S.V.E.	'72	C	59f	1 2	G	Shows cross-multiplication. Compares numerators & denominators. Pace of cassette is slow
C-1, 2,3,	F	Decimal Names for Rational Numbers	General Learning Corp. NCTM	'70	C	8 min	2	VG	Good for understanding of decimal numerals
C-1, 2,3, 4	F.S. C N.B.	Math. Decimal Numeration -Decimal Systems & Decimal Fractions	Viewlex	'73	C	62f & 25f	1 2	G	Imperial units. Good for place value. Audio casettes & N.B. good for individual instruction
C-1, 2,3, 4	K	Decimal Set Lubienski Blocks	Macmillan				1 2 3	E	Wooden cubes - groups of 10, 100, 1 000 metric measure. Good for models of decimal numerals.

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
C-1, 2,5	F.S.	The Meaning of Decimals	P.S.P.	'70	C	40f	1	VG	Not S.I. Presentation is easy to follow.
C-1, 9	P.L. A.S.	Decimals, Fractions & Division	Macmillan	'73		40f	1	VG	Good for individual instruction. Changes fractions to decimals. Multiplication & division of decimals by whole numbers. Adds zeros to dividend after decimal.
C-2, 3,4, 5,6	P.L. A.S.	Learning About Tenths	Macmillan	'73		40f	1	VG	Good for individual instruction. Meaning of decimals and simple addition.
C-2, 3,6, 8	P.L. A.S.	Problems & Practice	Macmillan	'73		40f	1	VG	Good for individual instruction. Reviews meaning of decimals and addition. Shows dividing by 10 is same as multiplying by 0.1.
C-4	P.L. A.S.	Decimals: Tenths & Hundredths	Macmillan	'73		40f	1	VG	Good for individual instruction. Order of decimals. Relates hundredths to dollars, cents.

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
C-4	P.L. A.S.	Using Decimal	Macmillan	'73		40f	1	VG	Good for individual instruction. Order of decimals. Adding, subtracting decimals
C-6	P.L. A.S.	Place Value Review	Macmillan	'73		40f	1	VG	Good for individual instruction. Adding of decimals is related to dollars and cents.
C-6 9	P.L. A.S.	Equivalent Decimal Fractions	Macmillan	'73		40f	1	VG	Good for individual instruction. Reviews adding, subtracting, multiplying & dividing decimals. Introduces equivalent fractions
C-7	F.S.	Estimation	Ed. Proj. Corp.	'69	C		2	VG	Rounding off with whole numbers
C-7, 9	F.S.	Multiplying Decimals	Curr. Films	'58	C	25f	1	G	Multiplying & rounding off decimals. British units.
C-8, 9	P.L. A.S.	Working with Decimals	Macmillan	'73		40f	1	VG	Good for individual instruction. Adding & subtracting decimals. Introduces multiplying of decimals, first by 10 and then other whole numbers.

GRADE 7 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frame	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
C-8, 9	P.L. A.S.	Dividing by Decimals	Macmillan	'73		40f	1	VG	Good for individual instruction. Multiplying by powers of 10. Division by decimals by moving decimal point.
C-9	P.L. A.S.	More on Multiplying	Macmillan	'73		40f	1	VG	Good for individual instruction. Uses metric measurement as an application of decimals.
C-18	2F.S. 2C	Fractions: A New Approach Group 2 Part 3	S.V.E.	'72	C	110f	1 2 3	E	2 filmstrips, 2 cassettes in set
C-18	G	Problem Solving Bingo	Creative Teaching Assoc.	'74			1	VG	Bingo-type game, recognition of operation to be used when solving a problem.

GRADE: 7 UNIT: Rate, Ratio & PerCent

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,2, 7,8	F.S.	Percent	McGraw Hill	'62	C	34 f	2	VG	A good introduction to the unit.
2,3	F.S.	Ratio & Proportion	McGraw Hill	'63	C	33 f	2	VG	Colorful & interesting but British units of measurement are used.
2,3,	A.V.T.	Ratio-Math Relationships	ACCESS		BW	10 min	1,2,3	VG	Not S.I. Relevant examples of ratios. Writing ratios & solving problems.
2,3, 4	F.S.	Ratio & Proportion	BFA	'70	C	53 f	2	G	Fairly interesting content - fish hooks, ping pong balls.
2,3, 4	F	Proportion at Work	Int. Film Bureau	'66	C	16 min	1,2,3	VG	Not S.I. Very interesting. Applied problem solving.
2,3, 4,9	F.S.	Using Ratio and Proportion	McGraw Hill	'66	C	40 f	1,2,3	VG	Good examples.
2,4	F	Ratio	Deerpark NCTM	'70	C	9 min	2	VG	Soap opera approach. (some humor)
3	F.S.	Using No. Pairs	Ed. Proj. Corp.	'69	C	41 f	2	G	Ordered pair notation for rates & ratios.
5,6, 7	F.S.	Meaning & Understanding of Per-Cent & Per-Centage	S.V.E.	'65	C	35 f	2	G	Convert fractions to decimals to percent.

GRADE: 7 UNIT: Rate,Ratio & Percent

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
5,6, 7,8	G	Numo	Midwest Publ.	'69			1,2	VG	Bingo type game- Equivalent forms of fractions, decimals and percent.
5,6 7,8	G	Decimal Fraction Dominoes	E.J. Arnold & Sons (Moyer)	'74			2,3,	VG	2-4 players. Equivalent decimals, fractions & percents.
9	F.S.	Commission-Meaning & Application	SVE	'65	C	48 f	2	G	
9	F.S.	Buying & Selling. Applications of percent	SVE	'65	C	43 f	2	G	Profit, Loss & Discount

GRADE: 7 UNIT: Measurement

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
General	G	Metric Challenge	Creative Teaching Assoc.	'74			2	G	Relates metric system to decimal number system.
1	F.S.	Story of Weights & Measures	Curi Films	'60		20 f	2,3	VG	Introduction to metric system of measure.
1,2	F.S. & C.	S.I.-The Metric System-Standardizing Measurement	Moreland & Latchford	'74	C	51 f	1,2	G	Very basic introduction to standards of measurement.
1,2, 3	2F.S. 1Record	Measurements are for a Purpose	SVE		C	14 min	2	Exc.	Good introduction to measurement.
1,2, 3,4,	F.S. &C	It's a Metric World-Lengthy Tales	Addison Wesley	'75	C	46 f	1,2,3	VG	Very good introduction to standard measurement and use of S.I.
1,2, 3,4	F	The Measure of Man	Halas & Batchelor Prod.		C	10 min	1,2,3,	VG	A good introduction to measurement. Metric units are mentioned.
1,2,3, 4,5	4F.S. & C	Metric 'n English? That is the Question	SVE	'73	C	Total of 250 f	1,2,3	VG	A clear explanation. An attempt to sell the metric system is made but rest is very good.

GRADE: 7 UNIT: Measurement

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,2,3, 4,5,7	S	Think Metric: Understanding & Using the Metric System	Devoyer Geppert Audio-Vis.	'73	C	80 f	2	VG	Only first 28 frames are good.
2	F.S. &C.	The Metric System: Historically Speaking	David Nelson Ent.		C	8-10 min	2	G	Historical background to the S.I. with stress on linear measurement.
3,4, 5,6	F.S. &C.	Linear Units (Metric)	Moreland Latchford	'74	C	54 f	2,3	VG	Perimeter is also developed.
3,6, 7,10	G	Travel Metre	Willard F.Reese	'75			1,2,3	G	Board game. Estimate and measure distances,temperature areas,volume & mass.
4,5 6	G	Metric Derby	Creative Teaching Assoc.	'74			2	G	Board game. Linear Measurement.
5	G	Metric Match-Up	Creative Educ.Act.	'75			1,2,3	VG	Card game (class sets) Converting units of length.
5	G	Metric Spinner Game	Creative Teaching Assoc.	'74			2	VG	2 players. Converting units of length. Includes litres & grams.
5	G	The Merry Metric	Creative Teaching Assoc.	'74			2	VG	Spinning dials. Converting units of length. Includes litres & grams.

GRADE: 7 UNIT: Measurement

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
6	F.L.	How to Use a Metric Ruler	Visual Ed.Inc.		C	3 min	2	G	Moves very quickly. Used as an introduction.
7,8	G	Metric 21	The Math Group Inc.	'74			1,2	VG	2-5 players. Card game. Estimating length of line segments and adding lengths to a total of 21 cm .
10	F.S. & C.	S.I. - The Metric System Measuring Mass	Moreland Latchford	'74	C	41 f	1	G	Very basic introduction to measuring mass.
10	F.S. & C.	S.I. The Metric System- Measuring Volume	Moreland Latchford	'74	C	40 f	1	G	Very basic introduction to measuring volume and using S.I. units.
12	F.S. & C.	It's a Metric World - Capacity Counts	Addison Wesley	'75	C	51 f	1,2,3	VG	Very good introduction to capacity units of measurement in the S.I. system.
12	F.S. & C.	It's a Metric World-Mass Matters	Addison Wesley	'75	C	43 f	1,2,3	G	Good presentation of metric units used for measuring mass.

GRADE: 7 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
General	K	Geoboard Activity Kit	Setsco				1,2,3	G	Activity cards incorporating many objectives. Useful as a lab approach.
1	F.S.	Introduction to Plane Geometry	A.E.P.A.	'60	C	38 f	2	G	General introduction to points,lines & planes.
1	F.S.	Geometry: Sets, rays, angles, figures	SVE	'65	C	62 f	2	VG	Appropriate.
1	F.S.	Points, lines & Planes	PSP	'67	C	41 f	2,3	G	Reviews definitions. Some is too complicated for Gr.7
1	F.S.	Distance & Betweenness	SVE	'63	C	40 f	2,3	G	Review of point,line,ray and segment.
1	F.S.	Geometry	Ed.Proj. Corp.	'68	C	41 f	2	G	Review of segment, ray, line, angle, triangle,intersection.
1	F	Geometry Lines & Shapes	Film Assoc. of Calif.	'65	C	9 min	1	G	Good introduction to geometry.
1	A.T.	Doing Geometry: Points Lines & Planes	Coronet Inst. Media			25 min	2	G	From a set of 10 tapes. Terminology is appropriate.
1,17	F.S.	Polygons	PSP	'68	C	40 f	2	Exc.	Reviews point, segment, curve, etc. Does some naming of polygons. Very good illustrations& order of frames.

GRADE: 7 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,17, 19,21	F.S.	Man & Measure	Filmstrip House		C	40 f	2	G	Definitions & examples.
1,17, 19,21	F.S.	Plane Figures	McGraw Hill	'62	C	35 f	2	VG	Has exercise frames. Omit classification of triangles by angles.
1,21, 22	AVT	Geometrical Shapes Math Relationships	ACCESS		BW	13 min	1,2,3	VG	Good introduction to geometry. Discusses parts of a circle. Angle measurement is included.
2	F.L.	Congruence	MacMillan	'69	C	3 min	1,2,	VG	Illustrates congruence by having various figures fit over one another by slides and reflections.
3	F.L.	Motion Geometry Translations	Macmillan	'69	C	3 min	1,2,3	VG	Introduction to a slide.
4,6, 7,8, 13,14, 20	F	Dance Squared	NFB		C	4 min	2,3	G	No voice commentary. A demonstration of above obj. Previewing & class preparation very necessary.
6,7,8, 9,13	G	Reflective Symmetry	Macmillan				1,2	VG	Plastic triangular shapes with original & image. Interesting puzzle.

GRADE: 7 UNIT : Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
8	F.L.	Motion Geometry Reflections	Macmillan	'69	C	3 min	1,2,3	VG	Good introduction to flips & reflections.
11,12	F.L.	Motion Geometry Rotations	Macmillan	'69	C	3 min	1,2,3	VG	Good introduction to rotations and turns.
17	G	Math Match	Creative Publ.	'71			1	G	Card game - very basic game in naming polygons.
17,18	A.T.	Doing Geometry: Triangles	Coronet Inst.Media			21 min	1,2	G	From a set of 10 tapes. Not S.I. Classification according to sides.
17,19	K	Tessellations	Macmillan				1,2,3	VG	Plastic shapes of regular polygons. Good for turns & slides.
17,19	K	Multi-Purpose Mosaic Shapes	Macmillan				2	G	Appropriate for Grade 7.
18	F.S.	Polygons	SVE	'64	C	58 f	2	G	First 40 frames suitable for Grade 7.
18	F	Trio for Three Angles	Intern. Film Bureau	'68	C		1,2,3	G	No commentary with film

GRADE: 7 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
19	A.T.	Doing Geometry: Quadrilaterals	Coronet Inst.Media			20 min	1,2	G	From a set of 10 tapes.
20	F.S.	Parallelograms and their Properties	PSP	'61	C	40 f	2	G	Frames 27-35 are too advanced for Grade 7.
21	F.L.	Circles	Macmillan	'69	C	3 min	2	VG	Definitions of interior & exterior regions, radius, diameter, arc, semi-circle.
21,22	A.T.	Doing Geometry Circles	Coronet Instr. Media			24 min	2	G	From a set of 10 tapes. Circle terminology, constructive circles, Inscribing equilateral triangle.

GRADE 8 UNIT: Sets

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
1,2	F.S.	The Language of Sets	S.V.E.	'62	C	35f	2	VG	A good review of Gr. 7 objectives, plus union and intersection
1,2, 3	K	Grouping Set	Macmillan				2	VG	Various wooden block shapes, cubes, prisms
2,3	F.S.	Union and Intersec-tion of Sets	Univ. Ed. & Visual Arts	'70	C	53f	2	VG	Intersection and union of sets, Venn diagrams. Does not review other set terms.

GRADE 8 UNIT: Measurement

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frame	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
Gen.	K	Basic Mathematics Packs B - C - D	Macmillan				1	G	Good for remedial work. A set of shapes is available as an aid in doing exercises.
A-1	F.S. C	It's a Metric World - Lengthy Tales	Addison-Wesley	'75	C	46f	1 2 3	VG	Good review of S.I. linear measurement
A-1	4F.S. 2C	Metric or English? That is the Question.	S.V.E.		C	250f total	2	G	Reviews units of measurement used in S.I. and gives justification for changing to S.I.
A-1	F.S. C.	Linear Units (Metric)	Moreland Latchford	'74	C	54f	2	E	Excellent for objectives stated. Perimeter & circumference included.
A-1 B-2, 3	G	Travel Metre	Willard F. Reese	'75			1 2 3	G	Board game requiring students to estimate and measure distances, areas, volume, temperature & mass.
A-1 B-1, 2,3, 4	S	Think Metric: Understanding & Using the Metric System	Denoyer-Geppert Audio Visuals	'73	C	80f	2	VG	Good only to slide 37.

GRADE 8 UNIT: Measurement

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-1	F.S.	Introduction to Area	P.S.P.	'68	C	42f	2	G	Very good development of the concept of area, but not S.I.
B-1, 2,3, 4	G	Area-Perimeter	Creative Teaching Assoc.	'74			1 2	G	Card game-determine perimeter and area of rectangular figures.
B-2, 3	F.S. C	It's a Metric World - Square Stories	Addison-Wesley	'75	C	57f	1 2 3	VG	Very good introduction to area measurement in S.I. units
B-2, 3,4	F.S. C	The Metric World	Moreland Latchford	'74	C	44f	2 3	G	Includes volume concepts
B-3	F.S.	Area Units (Metric)	Moreland Latchford	'74	C	49f	2	E	
C-1, 2,3	F.S.	Using the Protractor	McGraw-Hill	'63	C	34f	2	VG	Correlated with use of mathematics, has exercise frames and is colorful and interesting.

GRADE 8 UNIT: Measurement

Obj. No.	Type of Aid	Name	Publ.	Date	B/W	min/frames	3. gifted	Good	Comments
C-1, 2,3	A.V.T.	Geometrical Shapes Math Relationships	ACCESS		B/W		1 2 3	VG	Measurement of angles included in this tape (middle part).
C-1	F.S.	Geometry-Lines, Angles, Arcs, Measures	S.V.E.	'65	C	35f	2	VG	Shows measures of angles and defines names of pairs of angles.
C-1, 3	F.S.	Angles	S.V.E.		C	45f	2	VG	A fairly formal approach, but well done.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
Gen.	K	Tessallations	Macmillan				1 2 3	VG	Plastic shapes - regular polygons. Good for turns and slides
Gen.	A.C.	Geoboard Activity Kit	Setsco				1 2 3	G	Useful for a lab approach. Covers many motion geometry objectives.
1	F.S.	Applying Geometrics	A.E.P.A.	'60	C	39f	2	G	Used to introduce triangles, trapezoids, quadrilaterals.
1,9, 10	F.S.	Polygons	S.V.E.	'64	C	58f	2 3	G	Some frames are more involved than is necessary for the objectives.
1,2, 5,8, 31	F.S.	Construction with compass and straightedge	McGraw Hill		C		2	G	Gives reasons for knowing constructions and explanations. Debatable terminology.
1,4	K	Reflective Symmetry	Macmillan				1 2	VG	Plastic triangular shapes that form an interesting puzzle.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
1, 15	A.V.T.	Geometrical Shapes- Math Relationships	ACCESS		B/W		1 2 3	VG	Good introduction to geometry. Angle sum of a triangle, measure of angles and parts of a circle are involved.
1, 26	F	Dance Squared	N.F.B.		C	4 min	2	G	No voice commentary. A brief demonstration relating film to objectives is necessary.
5,9	F.S.	Postulates Trianges and Circles	A.E.P.A.	'60	C	31f	2	G	Congruent triangles, segments, circles.
5,9, 13	F.S.	Congruence	S.V.E.	'63	C	55f	2	G	
7,8, 9,10, 11	G	Polygon	Creative Teaching Assoc.	'72			2	VG	Card game. Properties of plane figures. Quite appropriate.
7	F.S.	Angles	S.V.E.	'63	C	45f	2	G	Fairly formal approach. May be used for clarification.
8, 11	F	Trio for Three Angles	Int. Film Bureau	'68	C	7 min	1 2 3	G	No commentary with film.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
8, 16	F.S.	Vocabulary Lines & Angles	A.E.P.A.	'60	C	46f	2	G	Classification of angles.
11, 12, 31	F.S.	Triangle Geometry	A.E.P.A.	'60	C	36f	3	G	Classification of angles according to sides and angles. May be confusing because of terminology.
13	F.S. C. N.B.	Congruent Triangles	Viewlex	'72	C	39f 44f	1 2 3	VG	Covers objectives.
13	F.S.	Congruence	S.V.E.	'63	C	50f	2 3	G	A good development but quite rigorous.
13	F.S.	Congruent Triangles	P.S P.	[illegible]	C	41f	2	VG	Good development. Leads into meaning of congruence. Develops SAS and ASA. Leaves SSS for viewer to discover.
15, 16	[illegible]	Angle Sum of Polygons	P.S.	[illegible]	[illegible]	44f		VG	Sum of angles of triangles and polygons. More extensive coverage than required.
17	F.S.	Geometry: Lines, Angles, Arcs, Measure	S.V.E.	'6[illegible]	C	35f	[illegible]	VG	Shows measures of angles and defines names of pairs of angles.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
17	F.S.	Commple-mentary & Supple-mentary Angles	P.S.P.	'68	C	40f	2	G	Also covers adjacent angles. Algebra involved is fairly complicated.
17, 18	F.S.	Angles	S.V.E.	'63	C	58f	2	G	First 51 frames suitable -congruent angles, supplementary and commplementary angles.
17, 18	F.S.	Lines & Angles	A.E.P.A.	'60	C	48f	2	G	
18	F.S.	Angle Relation-ships	H.M. Stone Publ.	'71	C	41f	2	VG	Appropriate
18	F.S.	Parallel Lines and Angle Relation-ships	H.M. Stone Publ.	'71	C	43f	2 3	VG	Appropriate
19	A.T.	Doing Geometry Perimeter	Coronet Instr. Media			21 min	1 2	G	From a set of 10 tapes, good for low level.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
19, 21-24, 26-29	F.S.	Geometry: Perimeter, Areas, Space Figures	S.V.E.	'67	C	58f	2	E	Very appropriate. Might best be used as a review.
19, 27	F.S. C	Linear Units (Metric)	Moreland Latchford	'74	C	54f	2	E	Perimeter and circumference.
21	F.L.	Area	Macmillan	'70	C	3 min	1	G	Basic introduction to concept of area by covering a region with unit squares.
21-24	F.S.	Areas of Polygons	Univ. Ed. & Visual Arts	'70	C	51f	2	G	Not S.I. Good development of area formulae.
21-24, 26, 28,	F.S. C	Area Units (Metric)	Moreland Latchford	'74	C	49f	2	E	
21-24, 28,	F.S.	[illegible]	McGraw Hill	'62	[illegible]	37f	[illegible]	G	Good development of linear and area measure. Uses British units at beginning. Too long for one period. Good for review.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
22, 23	F.S.	Areas of Triangular Regions	P.S.P.	'68	C	40f	2	VG	Not S.I. Good development of formula.
23	F.S.	Area of Triangles	H.M. Stone Prod.	'71	C	41f	2	G	Not S.I. Explanations are required for some symbols used. Need previous knowledge of ratios.
23, 24	F.S.	Areas of Polygonal Regions	S.V.E.	'64	C	50f	2	G	First 42 frames suitable for grade 8.
24	F.S.	Area of Trapezoids	H.M. Stone Prod.	'71	C	42f	2 3	G	Only first 14 frames are suitable for this objective with average students.
26	G	Area-Perimeter	Creative Teaching Assoc.	'74			1 2	G	Card game. Object is to determine area and perimeter of rectangular figures.
27	A.V.T.	The History of Pi (π) Adventures in Math	ACCESS		B/W	10 min	1 2 3	VG	Historical discussion of π and its relationship to circumference and diameter.

GRADE 8 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
27, 28	K	Geometry (The Circle)	Central Scientific Co.				1 2 3	G	Apparatus is supplied for five laboratory demonstrations. Only the apparatus for two of the five is appropriate
31	F.S.	Construc-tions with Compass & Straight-edge	McGraw Hill	'62	C	36f	2	G	Not all of Objective 30 is covered. Good introduction.
31, (1, 2,8)	F.S.	Using Con-gruence in Construc-tion	P.S.P.	'66	C	39f	2	G	Copying segments and angles. Leaves tri-angle constructions as exercises. Frames 24-28 dwell on sum of two sides must be greater than third side.
31 (1,2, 3,4)	F.L.	Using a Compass	Macmillan	'69	C	3 min	1 2	G	Illustrates basic constructions. Good review of required steps.
32, 33	K	Geometric Shapes	Macmillan				2 3	E	Flat plastic shapes could be used to build prisms and polyhedra, etc.

GRADE 8 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg. 3. gifted	Rating: Exc. V. Good Good	Comments
A-1	F.S.	What Number Properties Signify	P.S.A.V.	'70	C	40f	2	G	Reviews properties
A-1 10	F.S.	The Distributive Property	S.V.E.	'65	C	30f	2	VG	Uses whole numbers and fractions to illustrate property.
A-2, 4,6, 11	F.S.	Negative Numbers	S.V.E.	'65	C	35f	2	VG	
A-2, 3,7	F.S.	Meaning of Signed Numbers & How to Add Them	F.O.M.	'60	C	41f	1 2 3	VG	Vividly illustrated.
A-2, 7,8, 9	G	Equations	Wff'n Proof				3	VG	Teacher evaluation of game is needed. Use type 1 and 2 game only. Enrichment.
A-8	F.S.	Subtraction of Signed Numbers	F.O.M.	'63	C	39f	2 3	G	Many student questions. Some teacher explanation required.

GRADE 8 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	LeveL: 1. low 2. avg. 3. gifted	Rating: Exc. V. Good Good	Comments
A-9, 10	F.S.	Multiplication of Signed Numbers	P.S.A.V.	'61	C	40f	2 3	VG	Examples and illustrations are clear. Student questions.
B-1	G	Absubmuldi Fractions	Educational Insights Inc.				2	E	Played as checkers. Computation required when jumping occurs.
B-1	K	Decimal Set - "Lubienski Blocks"	MacMillan				1 2 3	E	Wooden cubes-groups of 10, 100, 1000 in metric measure. Very good for model of decimal numbers.
B-1	G	Here to There Fraction Game	Gage	'71			1 2	E	Good practice in addition and subtraction of fractions.
B-1	2F.S. 1A.T.	Fractions: A New Approach Group 2, Part 3	S.V.E.			110f	2	VG	
B-1, 9	G	Fraction	Creative Teaching Assoc.	'71			2 3	VG	2 players, review of equivalent fractions, multiplication, inverse adding, and subtracting fractions.

GRADE 8 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg 3. gifted	Rating: Exc. V. Good Good	Comments
B-1, 13	F.S.	The Distributive Property	S.V.E.	'65	C	30f	2	G	Uses whole numbers and fractions to illustrate distributive property.
B-1 14	2F.S. 1A.T.	Fractions: A New Approach Group 2	S.V.E.	'72	C	115f	2	VG	Appropriate
B-6, 9	F.S.	Identity Elements and Inverses	Univ. Ed. and Visual Arts	'70	C	53f	2	VG	Good presentation. Questions at the end.
B-6, 9,11	F.S.	Identity and Inverse Property	S.V.E.	'62	C	62f	2	G	Many examples of inverses and identities. Proofs at end may not be worthwhile.
B-9, 11, 13	2F.S. 1A.T.	Fractions: A New Approach Group 2, Part 1	S.V.E.	'72	C	100f	3	G	Heavy emphasis on properties

Grade 8 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1. low 2. avg. 3. gifted	Rating: Exc. V. Good Good	Comments
B-18	G	X-Pert	Creative Educational Activities	'75			1 2 3	VG	Bingo-type game, solving conditions.
B-18	F.S.	Inverse Variation	F.O.M.	'67	C	38f	2 3	VG	Good content.
B-18	F.S.	Direct Variation	F.O.M.	'65	C	40f	2	VG	Good content.
B-18	F.S.	Equations and Equivalent Fractions	P.S.A.V.	'61	C	39f	2	G	Uses terms "roots" and "permissable replacement".

GRADE: 8 UNIT: Rate, Ratio & Per Cent

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1	F.S.	Using Number Pairs	Ed.Proj. Corp.	'69	C	41 f	2	G	Good review ordered pair notation for rates & ratios.
1,2	A.V.T.	Ratio-Math Relationships	ACCESS			10 min	1,2,3	VG	Not S.I. Relevant examples of ratios, writing ratios, and solving problems.
1,2	F	Proportion at Work	IFB	'66		12 min	1,2,3	VG	British units, applied problem solving.
1,2	F.S.	Ratio & Proportion	McGraw Hill	'63	C	33 f	2	VG	Not S.I. but development is well done.
1,3, 4,5, 6,7	F.S.	Percent	McGraw Hill	'62	C	34 f	2	G	Explains meaning of percent well. More development needed in solving percent problems.
3,4, 5,6	G	Decimal Fraction Dominoes	E.J. Arnold & Sons (Moyer)	'74			2,3	VG	2-4 players, good quality . Convert decimals, fractions & percent

GRADE: 8 UNIT: Exponents

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,2	F.L.	Exponents	Macmillan		C	3 min.	1,2	VG	Very basic introduction of terms base and exponent. Explains exponents as repeated factors of the base.
1,3	F.S.	Exponents & Multipl.	H.M. Stone Prod.	'71	C	40 f	2,3	VG	
2	F.S.	Decimal (Base 10) Numeration System	Univ.Ed. & Vis. Arts	'70	C	48 f	2	G	Expanded form of whole nos. can be used as a review to build up exponents.
3	AVT	Large Nos. Math Relationships	ACCESS			10 min	1,2	G	Discusses exponential growth- powers of 2, as well as other large nos.
3	G	Numo	Midwest Publ.	'69			1,2	VG	Bingo type game. Determine value of exponential expressions.
3,4, 6,8	G	Equations	Wff'n Proof		C		3	VG	Teacher explanation needed. Use only games 1 & 2. Enrichment.
11,12	F.S. C. N.B.	Scientific Notation	Viewlex	'73		50 f	2,3	VG	

GRADE: 9 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
General	K	Basic Mathematics-Packs B-C-D	Macmillan				1	VG	Excellent remedial work-metric.
1	G	Equations	Wiff'n Proof				3	VG	Complicated, teacher explanation required. Enrichment.
1	G	Absudmuldi Fractions	Educ. Insights Inc.				2	Exc.	Played as checkers. Computation required when jumping.
1	G	Here to There Fraction Game	Gage	'71			1	Exc.	Remedial practice in adding & subtr. fractions.
1	F.S.	The Distributive Property	SVE	'65	C	30 f	2	Exc.	Excellent review of Grades 7 and 8.
1	F.S.	Identity & Inverse Properties	SVE	'62	C	40 f	2	VG	
1	F.S.	Subtraction & Division	SVE	'62	C	44 f	2,3	VG	
1	F.S.	Number Fields	PSP	'67	C	41 f	2	VG	
3	G	X-Pert	Creative Educational Activities	'75			1,2,3	VG	Bingo type game. Solving conditions.

GRADE: 9 UNIT : Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
3	F.S.	Equivalent Open Sentences	SVE	'64	C	40 f	2,3	G	First 24 frames are suitable.
3	F.S.	Direct Variation	FOM	'65	C	40 f	1,2	VG	Good content.
3	F.S.	Inverse Variation	FOM	'67	C	38 f	2	VG	
3	F.S.	Solving Inequalities	FOM	'64	C	42 f	2	VG	Suitable for introduction. Frame #19 incorrect.
3	F.S.	Rearrangement Theorem of Addition	FOM	'66	C	39 f	2	G	Assoc. & comm. properties of addition. Appropriate for rational nos.
3	F.S.	Equations with Fractions	FOM	'63	C	42 f	2	G	
7	F.S.	Formulas Work for You	FOM	'60	C	41 f	2	G	Shows usefulness of formulas. Graphing.
7(a)	F	Formulas in Math.	IFB	'59	C	10 min	1,2,3	G	Imperial units are used and only the formula D= rt is developed.

GRADE: 9 UNIT: Rational Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
7(a)	F.S.	Problem Solving	FOM	'61	C	41 f	2	G	Several approaches for solving distance, time, rate problems.
7(b)	F.S.	Problem Solving: Coin Problems	FOM	'69	C	39 f	2,3	G	Some examples worked in one variable but some are worked in two variables.
7(b)	F.S.	Work Problems in Math.	PSAV	'70	C	41 f	2	G	Quite suitable except frames 30 and 31.

GRADE: 9 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1	F.S.	Geometry Vocabulary Polygons	AEPA	'60	C	56 f	2	G	Good review.
1	G	B.J.'s Math-games Geometry	Scholar's Choice	'75			1,2	G	Re-enforcement drill on recognition. Interest may not be too high.
1-19	K	Geometric Shapes	Macmillan				2	G	Appropriate for Gr. 9 volume but also useful in classifying triangles, quadrilaterals, etc.
1	F.S.	Polygons	SVE	'64	C	50 f	2	G	Classification of polygons. More involved than is necessary.
1	F.L.	Using a Compass	Macmillan	'69	C	3 min	1,2	G	Review of basic constructions.
1	F.S.	Area of Trapezoids	H.M.Stone Prod.	'71	C	42 f	2,3	G	British units. Frames 1-19 are good development. Good resource pages included.
1	K	Reflective Symmetry	Macmillan				1,2	Exc.	Plastic triangular shapes form an interesting puzzle.
1	K	Tessalations	Macmillan				1,2,3	VG	Plastic shapes- excellent for turns and slides.
2	S	Think Metric: Understanding & Using the Metric System	Denoyer Geppert A.V.	'73	C	80 f	2	VG	Good for review of metrics & an introduction to use of metric volume & temperature units.

GRADE: 9 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
2	F.S. C	It's a Metric World- Cubic Concepts	Addison Wesley	'75	C	43 f	1,2,3	VG	Good Introduction.
2	F.S. C.	The Metric World	Moreland Latchford	'74	C	44 f	2	G	Good for enrichment on area, volume.
2	F.S.	Geometry- Perimeters, Areas, Space Figures	SVE	'67	C	58 f	2	Exc.	Good review.
2	F.S.	Areas of Polynomaial Regions	SVE		C	50 f	2	G	British Units. Review of area of polygons.
2	F.S. C.	Linear Units (Metric)	Moreland Latchford	'74	C	54 f	2	Exc.	Excellent review.
2,13, 10,16	F.S. C.	Area Units (Metric)	Moreland Latchford	'74	C	49 f	2	VG	Good for review and for teaching the objectives listed.
2,11, 12,13, 14,15, 16,17, 18,19, 20,21, 22,23, 24,25, 26,27	4 F.S. 4 R.	Discovering Solids	Eye Gate House Inc. (Cenco)	'72	C	@ 70 f	2	Exc.	Excellent for review of Grade 9 geometry. Imperial units.

GRADE: 9 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
4,5	F.S.	The Pyth-ogorean Theorem	PSP	'61	C	39 f	2	Exc.	Uses and proofs of the Pythogorean theorem.
4,5, 6,7, 8	F	Possibly So Pyth-ogorus	IFB	'63	C	14 min	2,3	VG	Use of the theorem of right angled triangles.
5,6	F.L.	Pythogorean Relations	Macmillan	'69	C	3 min	1,2,	VG	Illustrates the Pyth. theorem with different sizes of triangles.
9	F.S.	Geometry Vocabulary Circles II	AEPA	'60	C	20 f	2	G	Introduction for Obj. 9.
9-27	K	Geometrical Models (00215 36104)	Macmillan				1,2,3	Exc.	30 plastic models,- prisms, pyramids, cones,spheres, cylinders. Excellent value.
9-27	K	Geometrical Models (00215 36007)	Macmillan				1,2,3	Exc.	15 plastic models- sphere, pentahedron, octabedron, hexagonal triangular right prisms, & pyramids, cones and cylinders.
9-27	K	Sage Kit	LaPine Scien-tific				1,2,3	Exc.	Plastic Models with same size bases & heights. Exc. for deriving formulas for the volume of cones &pyramids.

GRADE: 9 UNIT: Geometry

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
9-27	K	Geometric Shapes	Macmillan				2,3	Exc.	Flat plastic shapes. Could be used to build polyhedra.
11,12	G	Polyhedron Rummy	Gage	'71			2	G	Card game. Gives practice in visualizing shapes of prisms & type & number of faces in each prism.
11,12	F.S.	Rectangular Prisms	PSP	'68	C	40 f	2	VG	Gives basic definition (point,edge,etc.) and practical illustrations of objects that are prisms. Does not discuss areas or volume.
13,19, 20,21	F.S. C.	Volume Units (Metric)	Moreland Latchford	'74	C	14 min 50 f	2	VG	Good for volume concepts.
19	F.S.	Volumes of Solids	SVE	'64	C	65 f	3	G	Development of volume formulas. Suitable for gifted students.

GRADE: 9 UNIT: Exponents

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1,2, 3	G	Equations	Wiff'n Proof				3	VG	Teacher explanation of rules needed. Enrichment.
1,2, 3	F.S. C N.B.	Fundamental Operations Bases & Exponents	Viewlex	'72	C	25 f	1,2,3	G	Appropriate content. C & N.B. are good for individualized instruction.
1,2, 3	F.S.	Exponents & Multipl.	H.M.Stone Prod.	'71	C	40 f	2,3	Exc.	Very appropriate.
1,2, 4,5, 6,7	F.S.	Exponents & Logarithms	PSAV	'62	C	45 f	2,3	G	Logarithm part is N/A.
1,4	F.S.	Exponents	McGraw Hill	'61	C	41 f	1,2,3	VG	Vividly illustrated with everyday examples. Not S.I.
4,5	F.S. C. N.B.	Math. Approximate Nos.- Scientific Notation	Viewlex	'73	C	50 f	2	VG	Good C and N.B. are good for individualized instruction.

GRADE: 9 UNIT: Algebraic Expressions

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1-7	F.S.	Polynomials & Mult.	H.M.Stone Prod.	'71	C	44 f	2	VG	Appropriate.
8,26 27,28	F.S.	Subtr. & Div.	SVE	'62	C	62 f	2	G	Covers several obj. Teacher must select frames to be used or use F.S. as a general review.
9,11	G	Alge - O Alg. Game	Creative Ed. Act.	'74			1,2,3	VG	Bingo type game. Multipl. of polynomials.
9,11, 16	F.S.	Multipl: Polynom-ials.	FOM	'65	C	41 f	2	VG	Well illustrated and explained. Not S.I.
11,12	F.S.	Distr. Property	SVE	'62	C	42 f	2	G	Review of the distributive property leading to mult. & factoring of polynomials.
12,15, 17,19	G	Alge-Nit Alg.Game	Creative Ed.Act.	'74			1,2,3	VG	Card game - old maid type. Factoring polynomials.
12,17, 19	G	X-Cite	Creative Ed.Act.	'74			1,2,3	VG	Bingo type game - Factoring polynomials.
24	F.S.	The Why of Simplifying Expressions	FOM		C	39 f	2	VG	Properties are used to simplify expressions.
27,28	F.S.	Addition Algebraic Fractions	FOM	'65	C	40 f	2	G	Takes too long to develop main idea.

GRADE: 9 UNIT: Real Plane

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge. 3.gifted	Rating Exc. V.Good Good	Comments
1,2	F.S.	Common Solution to Two Linear Equations	PSAV	'61	C	41 f	2,3	G	A good introduction to coordinate system. Last part of F.S. could be used for enrichment.
1,2	F	Solving Pairs of Equations (Pirates)	General Learning Corp.	'70	C	10 min	1,2,3	VG	Very good introduction to plotting points in the first quadrant.
1,2	F.S.	Graphing Sentences in a Plane	Univ.Ed. & Vis. Arts	'70	C	53 f	2	VG	Good development on plotting of points. Restricted to integers. Introduction to graphing on the real plane.
1,2,	F.S.	Introduction to Coordinate Geometry	PSP	'61	C	43 f	2,3	G	Frames 1-28 are suitable. Frames 29-43 calculate distance between points. Possible enrichment.
1,2, 3	A.V.T	Graphs	ACCESS		BW	20 min	2,3	VG	Good introduction to graphing on real plane. Also graphs measureable quantities. Not S.I. Shows relationship between math and science.
2	G	Four-In-A-Row	Gage	'71			1,2,3	VG	Unique game involving use of multipl. or addition in plotting.
2	G	Vector Cricket	Macmillan				1,2,3	VG	Variation of "Battleships"-game using 4 quadrants.

GRADE: 9 UNIT: Real Plane

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
2	F.S.	Introduction to Functions	FOM	'63	C	40 f	2,3	G	Suitable up to frame 26- Beyond only for gifted.
3	F.S.	The Parabola	PSP	'64	C	39 f	2	VG	Clear graphs & good sequence of ideas. Some material is enrichment.
3	F.S.	Formulas Work for You	PSP		C	41 f	2	VG	Many practical formulas- graphing.
3	F.S.	Direct Variation	FOM	'65	C	40 f	2	VG	Physical variation, graphing problems.
3	F.S.	Finding Equations of Lines	FOM	'68	C	42 f	3	G	Enrichment only.

GRADE: 9 UNIT: Real Numbers

Obj. No.	Type of Aid	Name	Publ.	Date	Color B/W	Length min/frames	Level: 1.low 2.avge 3.gifted	Rating Exc. V.Good Good	Comments
1	G	Equations	Wiff'n Proof				3	VG	Teacher explanation of rules required. Enrichment.
1,2	F.S.	Introduction to Irrational Nos.	FOM	'63	C	41 f	2,3	VG	Well explained. Proof that $\sqrt{2} \in \overline{Q}$.
1,2, 3,4,	G	The Real Nos. Game	Wiff'n Proof	'66			3	VG	Use and recognition of real nos.
4	F.S.	The Real No. Line	Univ.Ed. & Vis. Arts		C	55 f	2	G	Good summary of relationship between number system. Very little development of irrational nos.

OPTION, ENRICHMENT, & MOTIVATION MATERIAL

IN ALPHABETICAL ORDER

A.V.T.	Abacus to Computer - Adventures in Mathematics, ACCESS
Game	Basis (1969) - International Learning Corp.
Kit	Chinese Tangram - Macmillan
A.V.T.	Divine Proportion - Adventures in Mathematics, ACCESS
A.V.T.	Doing Geometry #10 - The Golden Section, Coronet Inst. Media
Film	Donald in Mathmagic Land (1969), Walt Disney
A.V.T.	Finonacci Sequence - Adventures in Mathematics, ACCESS
F.L.	From Hexagon to Square, NFB
A.V.T.	From Time to Time - Adventures in Mathematics, ACCESS
A.V.T.	Games, Puzzles, Logic - Math Relationships, ACCESS
F.S.	Geometric Series (1965) P.S.A.V.
A.V.T.	Guilty or Not Guilty - Adventures in Mathematics, ACCESS
F.S.	History of Calculation - Math. Pie Ltd.
A.V.T.	History of Indian Mathematics - Adventures in Mathematics, ACCESS
F.S.	History of Numerals, Part I, Math. Pie Ltd.
F.S.	History of Numerals, Part II, Math. Pie Ltd.
A.V.T.	History of Numerals, Adventures in Mathematics, ACCESS
Slides & Record	An Introduction to Computers and Computing (1970) C. I. Audio Visual Ltd.
A.V.T.	Inverse Variation - Intermediate Mathematics, ACCESS
Film	Language of the Graphs (1948) - Coronet
A.V.T.	Math in Decision-Making - Adventures in Mathematics, ACCESS
A.V.T.	Math in Map-Making - Adventures in Mathematics, ACCESS
A.V.T.	Math in Music - Adventures in Mathematics, ACCESS

OPTION, ENRICHMENT, & MOTIVATION MATERIAL

IN ALPHABETICAL ORDER

F.S.	Mathematics for Computers: The Binary System, (1966), McGraw Hill
Activity Cards	Mind Expanders (1974), Educational Insight Inc.
Film	Money in the Bank and Out (1964), Dimension Films
Kit	Multi Purpose Mosaic Shapes - Macmillan
Film	Music of the Spheres, Part I, British Broadcasting Corp.
Film	Music of the Spheres, Part II, British Broadcasting Corp.
Film	Notes on a Triangle (1967), N.F.B. of Canada
F.S.	Number Bases Other Than Ten (1963), McGraw Hill
F.S.	Numeration Systems (1968) Educational Proj. Corp.
Game	Operational Systems (1969) McGraw Hill
F.S. & Cassette	Operations with Approximate Numbers (1973), Viewlex
Game	Pentomino - Creative Teaching Assoc.
Film	Predicting through Sampling, Bailey Film Assoc.
F.S.	Probability (1970), Educational Proj. Corp.
Film	Probability (1970), N.C.T.M.
Game	Quik-Sane, Wiff'n'Proof
A.V.T.	Shapes of Numbers- Adventures in Mathematics, ACCESS
F.S. & Cassette	Significant Digits (1973), Viewlex
Slide & A.V.T.	Slide Rule: Calculation Made Simple (1972) Pickett Industries
A.V.T.	So You Want to Buy a Car - ACCESS
Game	Solve It (1973), Creative Teaching Assoc.
Game	Space Lines, Naughts and Crosses, Macmillan

OPTION, ENRICHMENT, & MOTIVATION MATERIAL

IN ALPHABETICAL ORDER

A.V.T.	Statistics - Math Relationships - ACCESS
Game	Take (1970), Academic Games Assoc.
Visual Aid	Tangled Angles, Macmillan
Game	Tower of Brahma -
A.V.T.	Trigonometry Applications - I.M.C.
Activity Cards	Unique Math Games (1974), Educational Insights Inc.
F.S.	Using Statistics: Making the Best Decision (1966), McGraw Hill
Film	What is a Computer (1970), Argo Record Co.

APPENDIX I

ADDRESSES OF PUBLISHERS OR DISTRIBUTORS

A & M Associates Inc.
P.O. Box 89
Newton, Mass.
U.S.A. 02168

Academic Games Assoc., Inc.
430 East 33 St.
Baltimore, Maryland
U.S.A. 21218

ACCESS Utilization Department
6005-103 Street
Edmonton, Alberta T6H 2H3

Activity Resources Co.
24827 Calaroga Avenue
Haywood, California
U.S.A. 94545

Addison Wesley Canada Ltd.
36 Prince Andrew Place
Don Mills, Ontario

American Educational Projection Association
c/o Griffin House
461 King Street West
Toronto 135, Ontario M5V 1K7

Argo Record Company
c/o Instructional Media Centre
2444 N. W. Market
Seattle, Washington
U.S.A. 98107

Bailey Film Assoc.
c/o Holt, Rinehart & Winston
55 Horner Avenue
Toronto, Ontario M8Z 4X6

B.F.A. Educational Media
2211 Michigan Avenue
Santa Monica, California
U.S.A. 90404

British Broadcasting Corp.
BBC Film Sales
135 Maitland Street
Toronto, Ontario M4Y 1E5

Cenco Educational Films
14920 - Stony Plain Road
EDMONTON, Alberta

Central Scientific Company
14920 - Stony Plain Road
Edmonton, Alberta

C. I. Audio Visual Ltd.
5 Rosemont Road
Hampstead, London NW3
England

Collier-Macmillan
539 Collier-Macmillan Drive
Cambridge-Galt, Ontario N1R 5W9

Coronet Instructional Media Ltd.
Unit 6, 2 Thorncliffe Park Drive
Toronto 17, Ontario M4H 1H2

Creative Educational Activities
P. O. Box 8232 - Station F
Edmonton, Alberta T6H 4P1

APPENDIX I - Continued:

Creative Publications Inc.
P.O. Box 328
Palo Alto, California
U.S.A. 94302

Creative Teaching Associates
P.O. Box 293
Fresno, California
U.S.A. 93708

Curriculum Films, Curriculum
Materials Corporation
c/o Griffin House
461 King Street West
Toronto 135, Ontario M5V 1K7

David Nelson Enterprises
c/o International Tele-Film Enterprises
47 Denseley Avenue
Toronto, Ontario M6M 2P5

Denoyer-Geppert Audio-Visuals
c/o P. O. Box 157
Calgary, Alberta

Dual Puzzles Co.
Box 1342
Palo Alto, California
U.S.A. 94302

Educational Insights Inc.
Carson, California
U.S.A. 90746

E. J. Arnold and Sons Ltd.
c/o J. M. Dent
100 Scarsdale Road
Don Mills 404, Ontario M3B 2R8

Encyclopaedia Britannica
c/o Visual Education Centre
115 Berkely Street
Toronto 2A, Ontario M5A 2W8

Eye Gate House, Cenco Educational
Films,
Central Scientific Co. of Canada
14920 - Stony PlainRoad
Edmonton, Alberta

Film Associates of California
2211 Michigan Avenue
Santa Monica, California
U.S.A. 90404

Filmstrip House
Carman Associates
Pine Grove, Ontario

F. O. M., c/o McIntyre Media Ltd.
86 St. Regis Crescent North
Downsview, Ontario

Gage Educational Publishing Ltd.
164 Commander Blvd.
Agincourt, Ontario M1S 3C7

General Learning Corporation
Educational Materials and Service Ltd
115 Nugget Avenue
Agincourt, Ontario M1S 3B1

Halos and Batchelor Production
International Tele-Film Enterprises
47 Denseley Avenue
Toronto, Ontario M6M 2P5

APPENDIX I - Continued:

H. M. Stone Productions
c/o McIntyre Educational Media Ltd.
86 St. Regis Crescent North
Downsview, Ontario

International Film Bureau
c/o Educational Film Distributors
285 Lessmill Road
Don Mills, Ontario M3B 2V1

International Learning Corporation
Maple Packers, 1111 Maple Avenue
Turtle Creek, Pa.
U.S.A. 15145

I.T.M. Educational Research
Addison, Texas
U.S.A. 75001

The Jam Handy Organization
c/o Scott Educational Materials
99 Advance Road
Toronto 18, Ontario M8Z 2T3

Kenworthy Educational Services Inc.
Buffalo, New York

La Pine Scientific Co.
6001 S. Knox Avenue
Chicago, Illinois
U.S.A.

L & M Enterprises
P.O. Box 88
Santa Monica, California
U.S.A.

Macmillan of Canada
70 Bond Street
TORONTO, Ontario M5B 1X3

Mathematical Pie Ltd.
26 Middlesex Road
Anglestone, Leicester
England

The Math Group Inc.
5625 Girard Avenue
South Minneapolis, Minn.
U.S.A.

McGraw-Hill, Ryerson Ltd.
303 Progress Avenue
Scarborough, Ontario M1P 2Z5

Midwest Publications Co., Inc.
Game Division
Box 129
Troy, Michigan, U.S.A. 48084

Milton Bradley Co.
Instructional Media Centre
2444 N. W. Market
Seattle, Washington
U.S.A. 98107

Moreland Latchford Productions Ltd.
299 Queen Street W.
Toronto, Ontario

Moyer
10924 - 119 Street
Edmonton, Alberta

National Film Board
Mr. A. G. Leith
10031-103 Avenue
Edmonton, Alberta

N.C.T.M.-National Council of
Teachers of Mathematics
1201 Sixteenth St. N.W.
Washington, D.C., U.S.A. 20036

APPENDIX I - Continued:

Pawnee Publishing Co.
P.O. Box 3435
Boulder, Colorado,
U.S.A. 80303

Picket,,Inc.
Santa Barbara, California
U.S.A. 93102

Popular Science Publishing
c/o McIntyre Media Ltd.
86 St. Regis Crescent North
Downsview, Ontario

Reese, Willard T.
Think Metric Assoc.
8452 - 117 Street
Edmonton, Alberta

Scholar's Choice
50 Ballantyne Avenue
Stratford, Ontario N5A 6T9

Scott, Foresman and Co.
Gage Educational Pub. Co.
164 Commander Blvd.
P.O. Box 5000
Agincourt, Ontario

See, Hear Now! Ltd.
Toronto, Ontario

Setsco Educational
1315 West 71 Avenue
Vancouver 14, B.C.

S.V.E. - Singer Education
and Training Products
c/o Educational Film Distributors
285 Lessmill Road
Don Mills, Ontario M3B 2V1

Taskmaster Limited
Morris Road
Clarendon Park
Leicester, England

3M Company
St. Paul, Minnesota
U.S.A. 55101

Universal Education and Visual Arts
Mr. Marvin Melnyk
203, 276 Main Street
Winnipeg, Manitoba R3C 1A9

Viewlex Inc.
c/o McIntyre Educational Media Ltd.
86 St. Regis Crescent North
Downsview, Ontario

Visual Education Corp.
364 Nassau Street
Princeton, N.J.
U.S.A. 08540

Walt Disney Films
c/o Bellevue Film Distributors Ltd.
Mr. Hank Heck
40 Lessmill Road
Don Mills, Ontario

Westinghouse Learning Press
c/o Viking Films Ltd.
525 Denison Street
Markham, Ontario L3R 1B8

Wiff' n Proof
P.O. Box 71
New Haven, Conn. U.S.A. 06501

Willowdale Media Inc.
12 Parfield Drive
Willowdale, Ontario M25 1B9

Woaton, Frank
1716 - 26A Street S.W.
Calgary, Alberta

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RETURN JAN 29

DUE EDUC FEB 26 '84
FEB 20 RETURN

DUE EDUC OCT 15 '80
OCT 15 RETURN

DUE EDUC OCT 01 '85
SEP 27 RETURN

DUE EDUC NOV 27 '80
NOV 20 RETURN

DUE EDUC FEB 07 '86
FEB 08 RETURN

DUE EDUC OCT 16 '81
RETURN OCT 18

DUE EDUC JAN 27 '87
JAN 20 RETURN

DUE EDUC NOV 4 '81
RETURN NOV 4 '81

DUE EDUC DEC 09 '92
1993 DEC 03 RETURN

DUE EDUC OCT 28 '83

DUE EDUC NOV 4 '83

RETURN NOV 3 '83

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